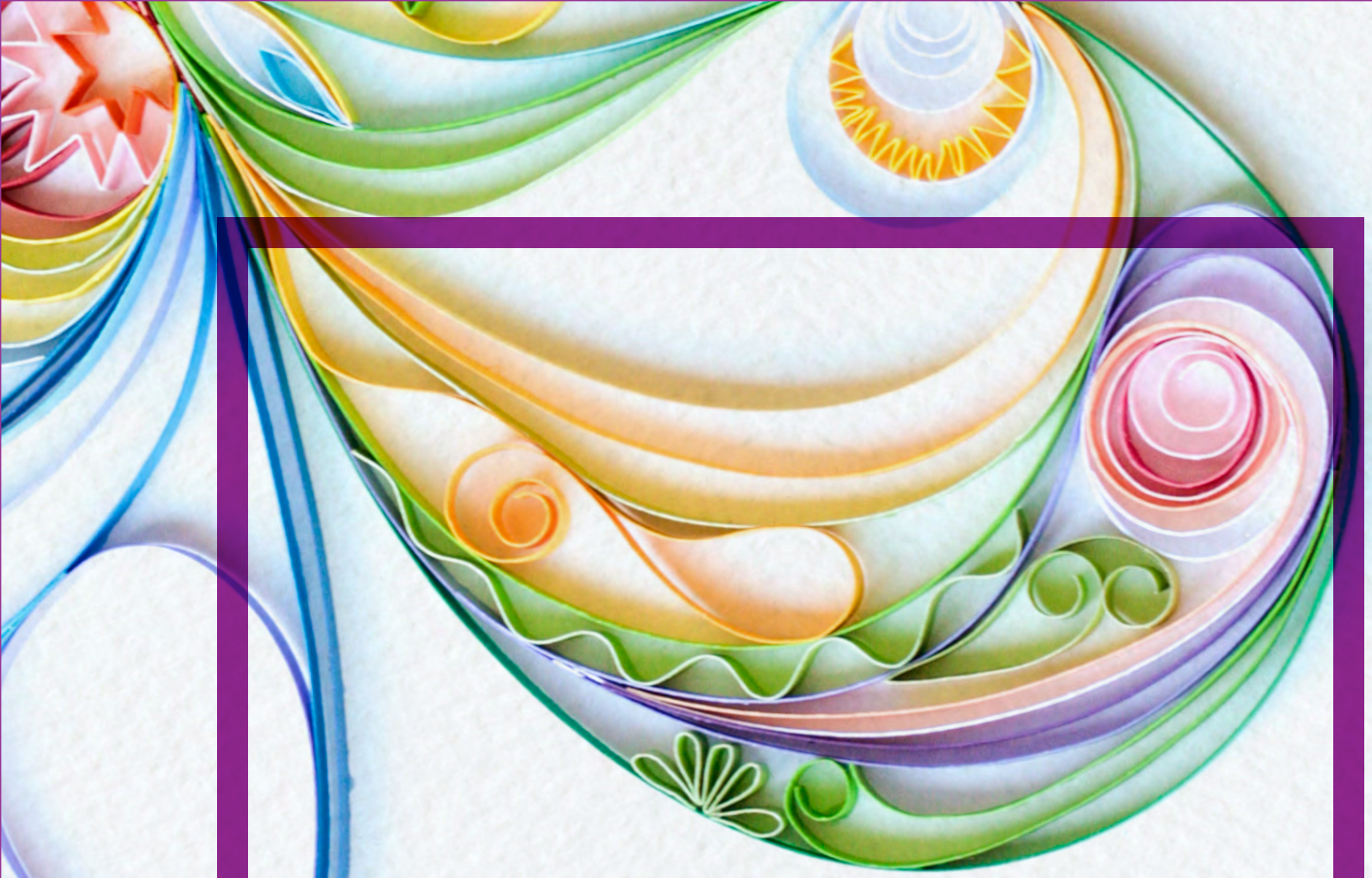


Makers in the Library

A TOOLKIT FOR BUILDING A COMMUNITY-DRIVEN MAKERSPACE

2nd Edition

Acknowledgements

We are so grateful for the contributions and generous spirit of all our colleagues who have helped us on this project. To the 10 original libraries in California that were part of our pilot project, the seven Charter Libraries that helped form Library Makers, and the 14 inaugural Ambassadors who provided feedback and examples for this new edition: We thank you for your efforts and guidance to inspire others to develop community-centered makerspaces.

Project Leads and Authors: Lisa Regalla, PhD, Regallium Consulting, LLC
Pamela Van Halsema, MLIS, P Van Halsema Consulting
Project Evaluator: Scott Burg, MA, MLS, Rockman et al, Inc.
Project Fiscal Agents: Califa and Southern California Library Cooperative
Publication Editor: Goli Mohammadi
Publication Designer: Kim Dow

CALIFORNIA PILOT LIBRARY STAFF

Lourdes Alvarez, Kristina Anderson, Charlie Arthur, Veronica Casanova, Tammi Devine, Lisa Duff, Olivia Escoto, Tamara Evans, Justin Formanek, Barbara Green, Guadalupe Gomez, Laurie Hancock, Margaret Kensinger-Klopfer, Jackie Kinsey, Sharé Mayes, Kelly McKean, Anita McLaughlin, Barbara Meija, Paula Miller, Rosendo Navarro, Amy Patton, Dani Perez-Granado, Abril Raya, Jennifer Reardon, Natalie Rencher, Magali Rivera, Jose Ruiz-Garcia, Sabine Salek, Sean Smith, Amelia Vander Heide, Christopher Veach, Martin Villegas

CHARTER MEMBER LIBRARY STAFF

Seiji Abe, Becca Cruz, Evie Diaz, Jennifer Eltringham, Jennifer Ensign, JC Escalante, Lauren Fellers, Jennifer Geeo, Julie Hall, Kennedy Joseph, Anne Kilkenny, Cara Kouse, Elacsha Madison, Evan Mather, Renee Neumeier, Michaela Null, Gary Ransford, Salina Yu

INAUGURAL AMBASSADORS

Maya Berry, Candace Birger, Trina Camping, Kameco de los Santos, Amy Holcomb, Cela Janiec, Karen Nguyen, Cindi Place, Conrrado Saldivar, Ivan Silva, Krystal Smith, Julia Thomas-Glennon, Danelle Toups, Cole Zrostlik

CALIFORNIA STATE LIBRARY

Bay Area Discovery Museum

Regallium Consulting LLC

This project was made possible in part by the U.S. Institute of Museum and Library Services.

Makers in the Library

Welcome

Welcome

INTRODUCTION

Libraries have always been committed to lifelong learning and have reinvented themselves to provide access to ever-evolving tools and materials that promote literacy, from microfiche to the internet to digital fabrication tools. Today, public libraries across the country are continuing that legacy by offering experiential learning through makerspaces, further rooting themselves as valuable community resources.

Considering there are over 9,000 public libraries in the US, the potential impact of offering maker programming is immense, but there's a misconception about the funding and resources necessary to make this happen. The truth is that you don't have to be a big city library, and it doesn't take fancy architects, expensive tools, and million-dollar budgets. At the heart of a sustainable makerspace are the people. And by focusing on your library's staff and the talents and interests of your community's patrons, anything is possible.

Rural Lakeport Library opens up indoor and outdoor spaces for maker programs for people of all ages.

Library staff collaborating and creating during a field trip to San Diego Central Library's makerspace.

The challenge is twofold: Many public libraries want to create a makerspace but aren't quite sure how, and if they do create one, they aren't sure how to keep it going.

This toolkit was specifically designed for public libraries with limited resources. However, many of the strategies and resources can be applied to other library types and even makerspaces outside of a library setting. Perhaps your organization:

- Received a 3D printer from a grant but isn't quite sure what to do with it
- Has always wanted a maker program but doesn't have enough staff members to run it
- Wants to transform an underutilized area into a makerspace but doesn't have the funds to do it
- May not have a dedicated space for maker programming

Sound familiar? Then this toolkit is for you! Often, the staffing, space, and budget that we think we need become barriers to entry, but there's a lot you can do with very little. Here we outline an approach to creating and sustaining a maker program in a public library.

This isn't a recipe book, but rather proposes a process to follow, stray from, and return to again. Because the process isn't linear (nor should it be!), there will be bumps in the road and frustrations that occur. This toolkit is about being committed to the long haul and staying strong through the messy and not-so-glamorous parts. The rewards of taking your time and making small changes will lead to big impact in the long run.

The practical tools presented here provide tested, concrete steps toward enhancing your library's offerings and meeting the needs of your community. We share these tools, alongside stories of successes and struggles, from real libraries, in the hope that they illuminate the possibilities and encourage you to give it a try and to persevere, no matter what your constraints.

WHAT IS MAKING?

Making is, quite simply, the process of creating something. Everyone is a maker in some form or fashion, and individual makers define what making means to them. Many of us were raised with parents who spent a great deal of time and energy making with their hands. They may have used the garage as a makeshift woodworking shop, made preserves and jams from scratch, engaged in troubleshooting and repair around the house, or spent countless hours sewing clothing by hand. The forms of making are as varied as the individuals who engage in these activities.

In the early part of this century, the Maker Movement was born from the growing do-it-yourself (DIY) culture. The movement gained popularity as a response to society's increasing emphasis on mass production and consumerism. Suddenly we found ourselves in a world where we're removed from the things we consume: eating out rather than cooking at home and expecting our clothing and furniture to show up in boxes on our doorstep. But makers are recognizing that and seeking sustainable alternatives to mass consumption and landfills brimming with discarded products.

Simultaneously, in education, traditional hands-on classes like woodshop and home-ec were being eliminated, leaving a generation of people who lacked the skills to make things. Makers combat these trends. They relish in fixing broken appliances, tinkering with new tools and technologies, creating customizations, and finding out how things work.

The beauty of making is that it empowers the maker. There's an innate sense of confidence, accomplishment, agency, and pride that comes from making. And as people make together, they form communities of like-minded individuals with shared passions and experiences who do incredible things and can affect large-scale change.

> *If you're using your hands to create something, you're a maker.*

THE MAKER MINDSET

More than any particular skill or degree, what defines a "maker" is their mindset. Makers tap into their natural curiosity and creativity, try things out, and view mistakes as moments for learning and growth. Wondering how a circuit works? Try making a simple one yourself. Wondering how to improve a tool or gadget? Take it apart and tinker with it. Inspired to learn a craft or technology, like mosaics or virtual reality? Take a risk and give it a try in a setting that allows for a bit of social support and encouragement.

When considering starting a makerspace, it's important to nurture this mindset in yourself, your staff, and your patrons. The maker mindset gives you permission to be flexible, experiment, play, make mistakes, troubleshoot, learn, and reinvent, empowering you to step outside your comfort zone, be an active participant, and recognize skills and talents you may not know you have.

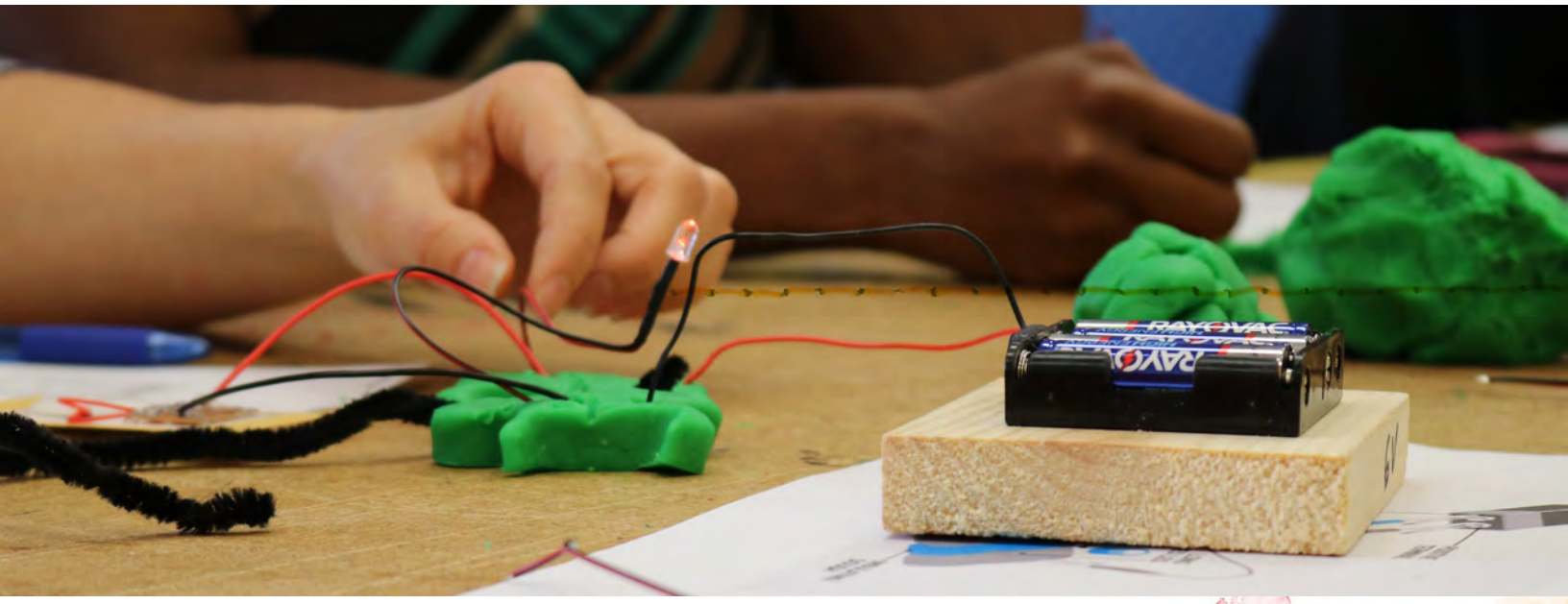
> *The most positive aspect of this program hasn't been the creation of a physical space but incorporating a maker mindset into programming for the public. This is much more in the spirit of what a library should be about.*

WHY MAKE IN THE LIBRARY?

Libraries have always been community hubs for learning—places to wonder, investigate, discover new ideas, and build knowledge. For library staff, supporting lifelong learning and literacy is nothing new; in fact, it's fundamental to their work. Libraries empower people and deliver knowledge through reading, cultural and educational programs, and by offering opportunities for diverse people to convene and connect.

Today, libraries aren't just a place for consuming resources, programs, and services, but also a place where patrons can be active producers too. If you enjoy coding, knitting, or tinkering with your bike at home, imagine how wonderful it would be to have a monthly meetup at the library with other people who also do those things. The library has always been a gathering place, and maker programming is another way to leverage the space and the library's resources to support the growth, learning, and culture of the community.

> *The library welcomes everyone and offers programs and services free of charge. This gives everyone access to the makerspace—especially important in a community that is low-income and faces several educational and socioeconomic challenges.*



Tinkering can be playful with simple circuitry and conductive dough.

WHAT DEFINES A MAKERSPACE?

The physical locations where making takes place are often called *makerspaces*. However, the term makerspace can be misleading. Any "place to make"—whether it's your dining room table, a school classroom, the children's area of your library, or your backyard—can become a makerspace. The ingredients for a makerspace are just people, materials, and a maker mindset.

Library makerspaces vary greatly depending on their staff, space, and capacity. Through our work, we noticed five types of makerspaces emerge, as outlined below. When we use the term "makerspace" throughout this document, we mean any of these five models, or the unique new model that you create!

MULTI-USE SPACE

A room or area of the library is quickly converted to serve as a temporary space for maker programming at a specific time. Tools and materials are stored in closets or on mobile carts that can be rolled into the program room when needed and then tucked away.

DEDICATED SPACE

A room or area in the library (e.g., underutilized computer room) is either specifically designed for or converted into a permanent space for maker activities, tools, and materials.

OUTREACH AND MOBILE UNITS

Maker programming is offered outside the parameters of the library by bringing tools and materials to people in locations like schools, nursing homes, clubs, and more.

AT-HOME PROGRAMS

Tools, materials, and/or instruction are offered to support makers who tinker at home at their own pace. This includes virtual programming broadcast via a meeting platform or on the internet. Tools and materials are sometimes checked out and other times freely distributed.

COMMUNITY EVENTS

Gatherings where local makers and creatives bring projects to share and demonstrate, get inspiration from each other, or offer their services to the community. This includes repair fairs, where experts offer their services to fix a variety of broken items.

For more information, please visit the **Brainstorm & Prototype** chapter.

FEATURED LIBRARIES

The pilot library sites were spread throughout the state of California.

The origins of this toolkit are from a partnership formed in late 2017 with the California State Library, the Bay Area Discovery Museum, and Regallium Consulting, LLC, through generous funding from the Institute of Museum and Library Services (IMLS). Over this ~3 year period, the goal was to develop a toolkit based on a pilot with 10 diverse libraries throughout the state of California to create sustainable, community-driven maker programs. All sites were chosen because they were under-resourced (staffing, funding, etc.) and/or served a high-needs community. What emerged were unique models for how maker programming can thrive in communities that may often be overlooked.

For a closer look at each of these 10 sites—including locality, staffing, primary audience, popular programming, and more—please refer to the **Snapshots** in the final section of this toolkit.

Since then, and with additional support from IMLS, the team wanted to extend our reach to support even more libraries. We set out to find and connect people who work in library makerspaces to form a professional learning network: the **Library Makers** community that provides library makerspace practitioners with a centralized space to consult with others in the field, share their own experiences, get input and solutions to technical problems, and much more.

To help guide the development of Library Makers during its inaugural year, we recruited a group of seven Charter Library Members representing public libraries from diverse communities (rural, urban, suburban) across the United States. These libraries became the founding institutional members of our Library Makers community and provided initial leadership.

Representatives of our pilot libraries met at the Bay Area Discovery Museum.

Representatives from seven Charter Member libraries from across the country collaborated for three years to design and launch the Library Makers community of practice.

We later recruited a team of 14 **Ambassadors**, individual library staff members who represented geographically and socioeconomically diverse places, to help create new content, recruit new members, and deepen connections with current members.

Individuals from all of these groups (the California pilot project, Library Makers Charter Members, and Ambassadors) have been instrumental in shaping the content of this second edition, an updated and expanded version of the original toolkit. Although this toolkit was written by and for public libraries, we hope that any library professional can find nuggets of useful information on its pages. And we welcome ALL of you (no matter what type of library you work at) to join our continued conversations on these topics on the **LibraryMakers.org** community.

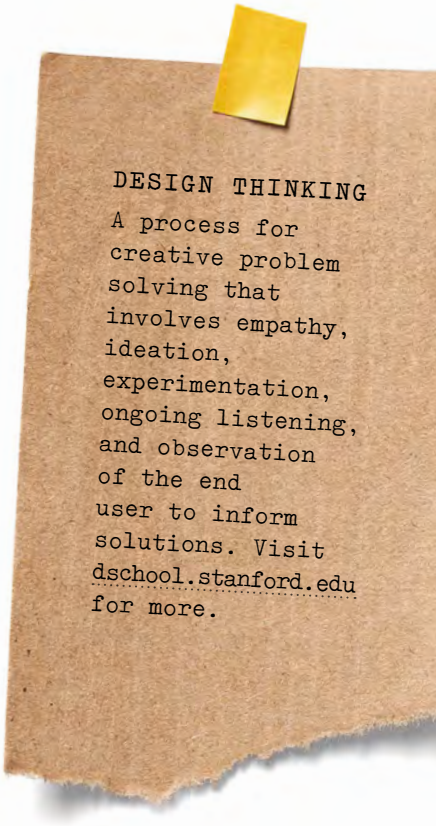
OUR APPROACH

Our approach is rooted in "start small and take it slow." We want *sustainable* makerspaces. And that means taking a deep breath and giving yourself the time and space for your program to evolve more organically.

We drew from the ***Making + Learning in Museums and Libraries*** resource from the Children's Museum of Pittsburgh, which outlines the three main components of makerspaces: people, purpose, and pieces & parts. While many of us begin our journey to start a makerspace because of a grant opportunity for a shiny new 3D printer or laser cutter, tools are just one facet of a space. A 3D printer does not a makerspace make!

Inspired by a process called *design thinking*, our approach places human experience at the center and allows for collaboration, creative problem solving, and the testing and refining of ideas before any permanent decisions are made. We'll touch on aspects of design thinking throughout this toolkit, but if you'd like to delve deeper into the process, we recommend ***Design Thinking for Libraries***.

Through an in-depth outline of our process, stories from our sites, and a collection of ready-to-use tools, this toolkit underscores the idea that all three main components—people, purpose, and pieces & parts—must be nurtured equally for a space to survive and thrive.



As a result of our makerspace, groups have seen new potential for what a library can do and how learning can happen. The space brings more people to the table.

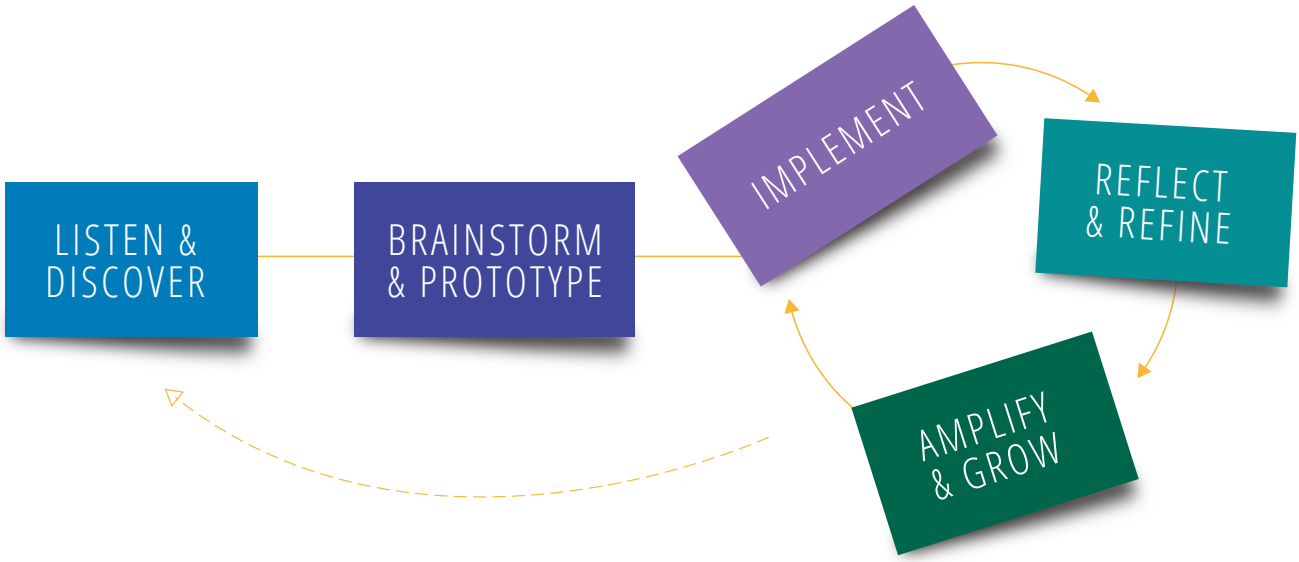
HOW TO USE THIS TOOLKIT

Our toolkit is divided into five distinct sections: Listen & Discover, Brainstorm & Prototype, Implement, Reflect & Refine, and Amplify & Grow. Each section includes helpful tips, photos, examples, anonymous quotes from our libraries, and links to practical worksheets, guides, and handouts in our Toolbox. A graphic yellow triangle allows you to toggle between the main text and the tools.

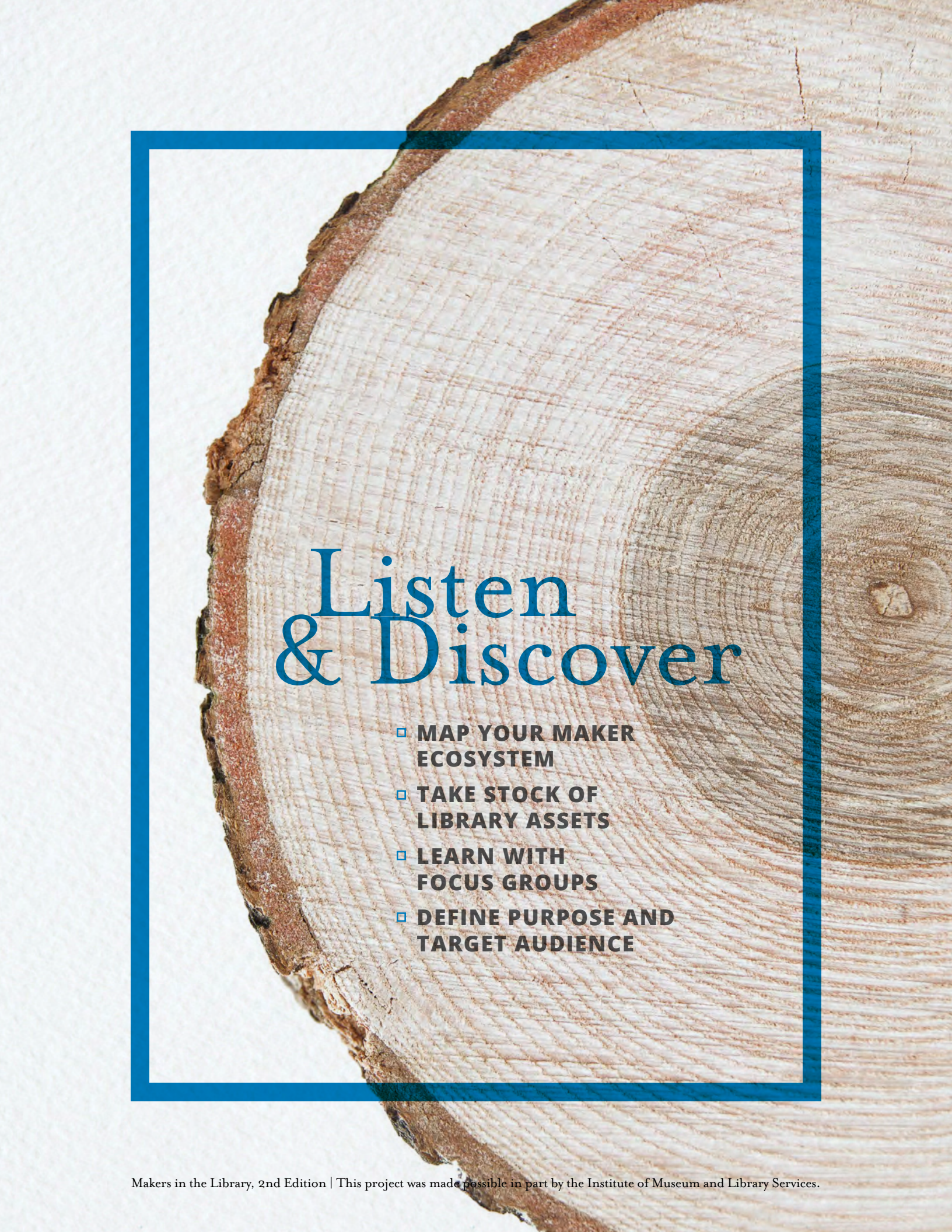
As illustrated in the following graphic, rather than all of the steps being strictly sequential and linear, they form a holistic process, parts of which are inherently recursive.

TOOL

This triangle on each tool will return you to its corresponding reference in the main text.



We recommend that on your first round, you do start with Listen & Discover, followed by Brainstorm & Prototype. Then, with the knowledge you've gained from these guided exercises, you move on to the cycle of the other three parts, which you may decide to do in whatever order makes sense for your library and program. As the dotted line in the graphic signifies, you may then need to go back to the first two steps in order to re-evaluate and generate new ideas to work with. While we do provide a framework here, your approach to developing your maker program will be as unique as your library and the community it serves.



Listen & Discover

- MAP YOUR MAKER ECOSYSTEM
- TAKE STOCK OF LIBRARY ASSETS
- LEARN WITH FOCUS GROUPS
- DEFINE PURPOSE AND TARGET AUDIENCE

Listen & Discover

We begin our journey focused on the people in your library and community, spending time understanding their talents, interests, and resources. Relationships take time to develop, so it's best to start here to lay the foundation. This asset-based approach allows the process to grow naturally, rooted in community needs and library capacity.

To that end, we'll start by mapping our community ecosystem, identifying all of the potential allies and partners that the library has. Then we'll take inventory of the assets that we have, including tools, materials, and programs already being offered. Once we have a clear view of what we have at our disposal to work with, we'll spend some time organizing and conducting focus groups—small-group discussions to learn about opinions on specific topics—in order to gain further insight into community needs. And finally, we'll use design thinking techniques to help define the purpose of your programming and your target audience, ultimately crafting an Audience Statement, Environment Statement, and Framing Question to help get your makerspace programming started.

Maker programs like this Learn To Knit session at Blanchard Community Library are wonderful for skill building, and they also provide a unique opportunity for strengthening intergenerational social connections.

MAP YOUR MAKER ECOSYSTEM

The greatest asset any library has is the people in its community. In this section, we help you identify your maker ecosystem, the network of library staff, allies and partners who understand the value of offering maker programming. Right now in your community, people are already making—even if they don't realize it or if they call it by a different name. For instance, they may be experimenting with digital video on their smartphones, sewing, tinkering with electronics, or gardening.

While your community may not be economically rich, it's filled with a wealth of people with unique know-how and wisdom, either from cultural traditions, specific skills and trades, family or work experience, or social connections. And in many cases, those who possess that knowledge also have access to the tools and materials necessary to apply the associated skills.

Why do we start with the community? Because these are the people who will make your space sustainable. They could end up helping you in a number of ways, including:

- Knowledge, skills, experience
- Space and other material resources
- Programming content and/or facilitation
- Access to new audiences
- Financial assistance

Building a network of organizations and people who care about the same outcomes—and are willing and able (and hopefully enthusiastic) to fill those gaps—takes time but will be important for sustaining and growing your program. Working together, both entities grow stronger.

We offer tools to help you map these assets so that you can discover the hidden potential that may live just down the street—as well as reveal the riches in your library itself. With a strategic approach, you may find ways to increase your capacity to offer maker programming without increasing your budget.

Identify Allies and Potential Partners

Initially, identify a core leadership group of staff and volunteers from your library who want to support the development of a maker program. These folks might be from your location or possibly affiliated another way. In an academic setting, faculty may be willing to share some of their expertise.

Either individually or in a staff meeting, start with a brainstorm. Ask everyone to list as many organizations, individuals, and businesses that fall in the categories listed

below. Participants could write on sticky notes, on white boards, or use digital tools to make their suggestions. What untapped assets are present in your community? Which organizations are vested in achieving similar goals or would benefit directly or indirectly from a library makerspace program?

Consider the following sectors:

- Community makerspaces
- Education
- Arts and culture
- Business and finance
- Science, health, and industry
- Nonprofit, faith-based, and civic organizations
- Government (city/county)
- Library

> *The makerspace could create a sense of community because you'd have people from different walks of life and different areas of the city who are coming to use these resources, and they can help each other and teach each other.*

Asking "Who cares about the library's makerspace program?" is an important question. Chances are there are many organizations and people in the community who would recognize the value of a library maker program. These are the people who will "get" what you're trying to do and help you affect change.

If your purpose is to provide access to coding, engineering, and technology resources to equip the next-generation workforce, then it's likely the local business community will care about the success of your program. If helping children experience and understand scientific concepts is the goal, then schools and children's science museums will likely care about the program. If passing on cultural traditions of needlework and weaving is part of the maker program, then local sewing and quilting clubs, as well as historical or cultural groups, may be interested.

But it's important to also think of others who may *not* "get it" yet, but who you believe would help strengthen your maker program and help it fit into the larger context of your city or town. Search for local organizations and leaders whose mission and values align or overlap with yours. From schools to civic groups, businesses, and clubs, identifying entities with similar goals is the initial step in your partnership outreach.

TOOL

MAKER ECOSYSTEM MAP

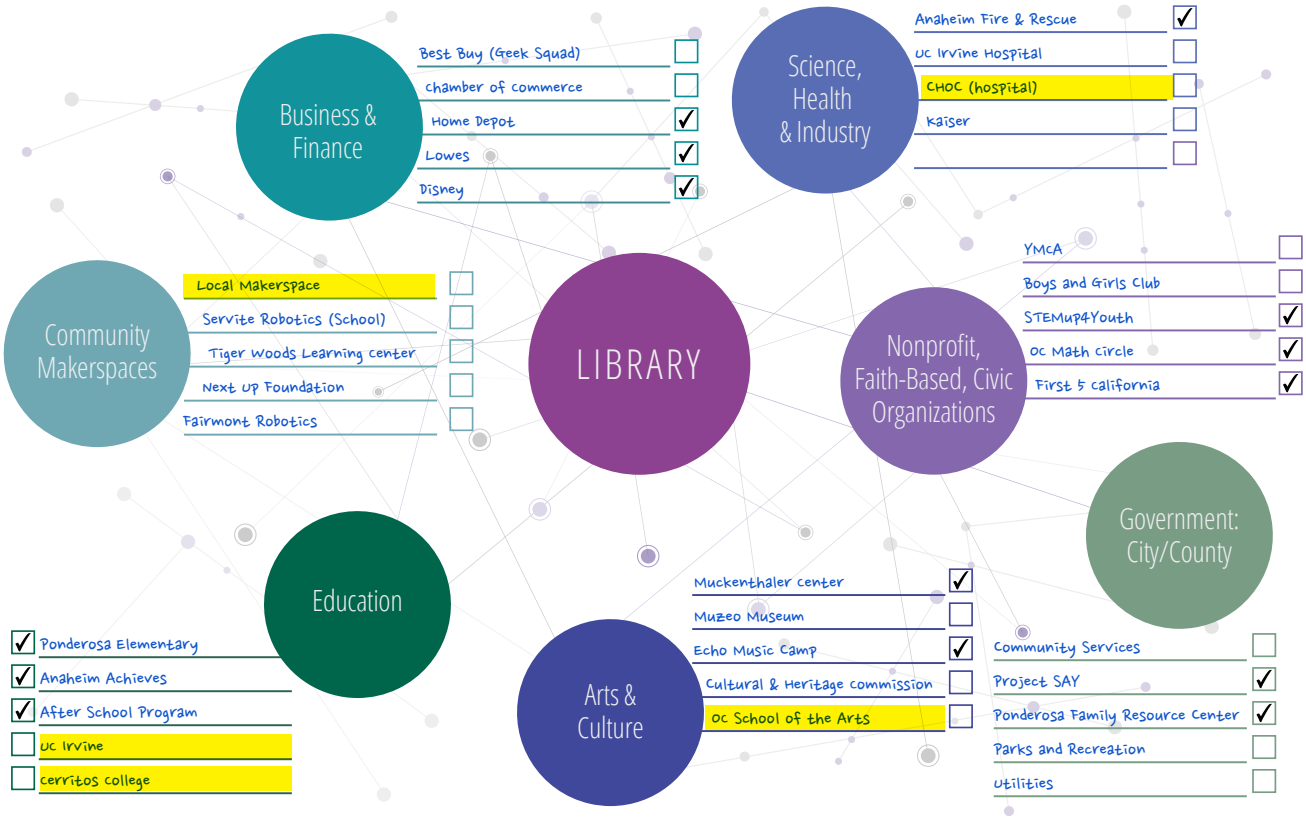
Use this tool to visually organize the people, businesses, and organizations in your library's ecosystem.

Create Your Maker Ecosystem Map

Once you have your initial list of names and organizations, arrange them in a visual display or diagram. This Maker Ecosystem Map displays possible members of a collaborative network, and this network has the potential to shift culture and open

up opportunity to a whole community. How might the library connect with these people and organizations? Are some of them already partnering with the library in other ways? Consider these connections as valued community assets that you can strategically seek and leverage as you build and maintain your makerspace program.

Indicate which ones are already active partners with your library by marking the check box next to the name. Then think about your library's capacity and what new partnerships could be synergistic at this stage. Highlight the names of least two potential partners that you'll reach out to first. The example below is from Ponderosa Library.



how to MAKE CONNECTIONS AND DEVELOP RELATIONSHIPS

What might happen if you start a conversation with two or more organizations in your ecosystem to broaden your reach for makerspace experiences? Now that you've made your initial map and recorded information about each potential partner in your spreadsheet, take the next steps to make connections.

STEP 1

LEARN ABOUT EACH ORGANIZATION

Check out their website and social media pages. Visit their location, attend one of their events, talk to their staff and beneficiaries, and learn about their work.

STEP 2

INITIATE A CONVERSATION WITH SOMEONE AT AN ORGANIZATION YOU HIGHLIGHTED

This could be the program director, the school principal, or similar. Invite them out for a cup of coffee, a lunch appointment, or an exploratory meeting. Let them know you're planning a makerspace and that you're interested in getting their input.

Listen and find out more about their organization's goals, strengths, and needs. As you get to know them, keep the door open for ways your organizations could help each other. Keep notes on these meetings, recording their suggestions and their level of interest.

STEP 3

SET UP A DISCUSSION WITH YOUR EXISTING PARTNERS

to talk about the makerspace you're developing. Ask them what ideas they have and what interest they might have in joining your efforts. Keep notes on these meetings, recording their suggestions and their level of interest.

STEP 4

INVITE THOSE WHO SHOWED INTEREST TO PARTICIPATE

in or observe an upcoming event in the next few months—an open forum, round table discussion, or similar program—to explore the climate and capacity for making in the community. Or attend an event they're hosting!

Developing relationships and strengthening connections with others in your maker ecosystem takes time—and it doesn't happen by accident. Don't get overwhelmed by the size of the task, but start strategically with just one or two organizations that might offer the greatest benefit to you at this stage. The most important part is to initiate and strengthen connections to create a healthy and balanced ecosystem that can grow over time.

FURTHER READING

Maker City: A Practical Guide for Reinventing Our Cities shares how people and organizations are leveraging the Maker Movement to build community, create economic opportunity, revitalize manufacturing and supply chains, reshape education and workforce development, and redefine civic engagement.

The Remake Learning Playbook covers the theory and practice of building learning innovation networks, the resources and strategies required to put networks into action, and the impact of the networks in schools, museums, libraries, communities, and more.

Working Together: Community-Led Libraries Toolkit provides philosophical and practical guidance for all stages of the library service planning process, from developing an understanding of community and needs identification through library policy development, service planning, day-to-day customer service, staff development, and evaluation. In addition to being a valuable resource for managers and librarians working with socially excluded communities, the Toolkit content is useful for any staff seeking to develop community-led practices, regardless of the social or socioeconomic group they most directly serve.

TAKE STOCK OF LIBRARY ASSETS

With the **Maker Ecosystem Map**, your team identified external organizations in the community that have the potential to offer value to your makerspace and to the local community of makers. Now it's time to take stock of the library's own existing assets—the physical items you already have on hand and the facilities that you have available. We offer tools to help. Next, a program inventory exercise will help you take a look at the range of programs that your library currently offers and determine which, if any, might become part of your new makerspace. We also encourage you to start noting what skills, hobbies, and expertise your staff and volunteers have to offer and are willing to teach to others. Often these talents remain hidden unless you take the time to ask. Together, all of these elements will provide your team a starting point for building your makerspace.

Physical Assets: Take Inventory of What You Already Have

TOOLS AND MATERIALS

Makerspaces can be filled with lots of brand new equipment and materials, but that can be expensive and might not even be necessary. Your library may already have many things on hand to run a maker program, so it's a good idea to start by taking inventory.

Before drafting a budget and starting any purchases, we recommend reviewing each section of the **Physical Inventory Checklist**. You may be surprised by what you already own, and it may reveal some areas that you might prioritize for purchase. Also consider reaching out to all the departments and branches in your library, in case you have options for shared equipment.

TOOL

PHYSICAL INVENTORY CHECKLIST

This tool contains an extensive list of common items that might be found in a library makerspace. Use it to take inventory of what you already have.

PHYSICAL SPACE

Most libraries don't have enough physical space to dedicate a fixed room for their makerspace. If you do, that's great! But if you don't, that shouldn't be the barrier to creating your maker program, as many creative options do exist. Some libraries have opted to convert a storage room, computer lab, or conference room into a makerspace. Others offer their program in a shared program room. Some have an outdoor patio that can be used when the weather permits. Sometimes the makerspace is a mobile cart, a ready-to-go project that can be set up anywhere, or even a mobile unit that moves from branch to branch, designed to be set up and put away with minimal effort.

Maybe one of the assets a community partner can offer is space. Is there a Parks and Recreation room that you can occupy once a week to offer maker programs? Or is a local community makerspace willing to partner with you and make space available?

Consider what spaces you have available for the maker program, for both the active program itself but also for storage. Don't forget storage—it's essential! We discuss storage solutions in the **Implement** chapter

Corona Public Library staff made a scale drawing of the rooms they planned to convert to a makerspace.

TOOL

PHYSICAL SPACE ASSESSMENT

Use this tool to answer a series of questions about the space you're considering, as well as to document details, photos, and measurements.

Program Assets: Take Inventory of What You're Already Offering

What programs are already being offered at your library? Are any of them aligned with making? If so, would you consider including these as part of your makerspace program? Why or why not? We recommend looking at what you're already doing as a library and then considering how the makerspace program fits in, which existing programs can fit under its umbrella, and if any existing programs might add more elements to complement your new program.

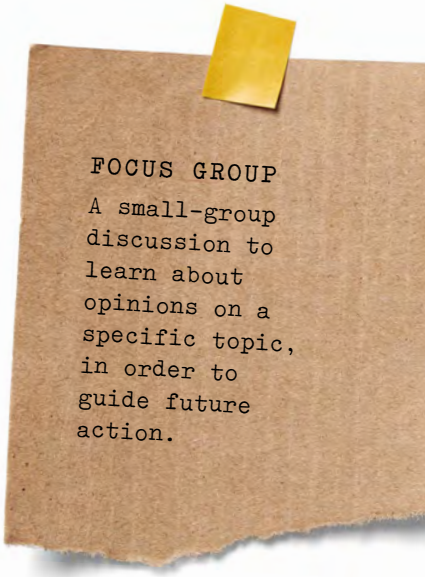
As you work to identify the purpose for your own makerspace, it's important to be able to articulate why certain programs are or are not included. Don't worry if you struggle to answer some of these questions now. We heard from several libraries that this tool was helpful to keep coming back to time and time again as you start to fine-tune the "identity" of your makerspace.

TOOL

PROGRAM INVENTORY

This tool helps you to review your existing program offerings, identify the programs with maker elements, log the details, and reflect.

LEARN WITH FOCUS GROUPS



There's no standard template of what a maker program or makerspace should look like, and the offerings are as varied as the communities they serve. Finding out the needs and desires of your unique community is at the root of determining the content, style, and format of your program or makerspace. Which target populations require services? What types of services should you provide? And which kinds of services will be most effective? If you've wondered these same questions, you're not alone.

One method for getting these answers is through a focus group. By allowing you to gather data from a range of individuals, focus groups can be a useful means to gain a lot of information in a relatively short amount of time. Here we outline the steps to assemble, conduct, and analyze your own focus groups. Adjust the setting and atmosphere for gathering the focus group to best fit your community. Hosting a potluck or social event along with the interviews may incentivize participation, and might help participants feel at ease to share their input.

Not able to get a focus group together at the same time and place at your library? Try setting up a virtual focus group over Zoom or your preferred video conferencing software. Many of the steps are the same as hosting a face-to-face meeting, but here are a few tips for a virtual meeting:

- Include time for participant introductions and briefly introduce key features of the video conferencing software in case you have participants who aren't familiar with how to mute their microphones, turn off cameras, or chat.
- Keep your focus group on track by posting slides, images, or links to a shared document with the questions you'll be asking.

Be aware that turning on video recording during your meeting might make people less inclined to share their opinions. You may wish to assign a note-taker role to someone in your group instead. You should also turn on accessibility options like captions for your virtual focus group.

A focus group meets at Blanchard Community Library.

how to RUN A FOCUS GROUP

STEP 1

CREATE YOUR INVITATION WISH LIST

Work with staff to determine the characteristics of participants you would like to include (age, race, gender, organization, ethnicity, etc.) and make sure there is diversity of thought and perspective. To get a complete picture of the needs, think about running three separate focus groups consisting of:

- **Staff and Volunteers:** Full-time, part-time, administration, as well as temporary staff and volunteers
- **Patrons**: Especially people from the demographic groups you think your makerspace program will serve
- **Community Members**: People who you consider current or potential future partners of your library (refer to your Maker Ecosystem Map to include a representative from a school, a civic organization, an art club, a cultural organization, a local business, etc.)

Chances are that not everyone on the list will be available or willing to participate, so include as many people as you can on the invitation wish list.

STEP 2

MAKE AN INITIAL PLAN

Sketch out how many focus groups you want to run, and block the time and space you need for these meetings. Keep in mind that each focus group should have no more than 8–10 people. Sessions generally run between 45 minutes to one hour and take place in a comfortable, quiet setting that is free of distractions. Participants should be seated at one table where they can all see each other, as well as the moderator. Providing refreshments also helps establish a relaxed atmosphere for participants.

STEP 3

INVITE THE PEOPLE ON THE LIST

Contact the people on the list via text, email, social media, or in person, and ask them if they're willing to participate. Consider inviting several people who happen to be at the library that day for a group activity or meeting, or ask some of your patrons or volunteers to invite a friend. Remember that a personal message is hard to ignore!

Recruit and schedule more participants than needed (around 12–14) to account for those who don't show up or cancel at the last minute. It's helpful to include language about the purpose of the focus group as part of any participant recruitment material and give invitees a deadline to respond (e.g., one week). Make sure to send a thank you to those who say yes, and then confirm the date, time, and location. Send a reminder the day before.

STEP 4

PLAN YOUR QUESTIONS

Structure your questions from general to specific, starting first with a brief icebreaker to put the group at ease. Questions should be open-ended to generate discussion, so you'll want to avoid "yes" and "no" questions. Starting questions with "what" or "how" will frequently encourage the most participation from the group.

TOOL

FOCUS GROUP RECRUITMENT SCRIPTS

Unsure of what to say when reaching out? This tool offers suggested scripts for inviting and following up with potential focus group participants.

how to RUN A FOCUS GROUP *continued*

STEP 5

ASSIGN ROLES

If possible, the session should be audio recorded. If there's anyone who doesn't wish to have the session recorded, then someone should be assigned to take detailed notes of the discussion. Sessions need a moderator to facilitate the group discussion. The moderator should be an effective communicator and someone who can build rapport with the participants, encouraging them to speak.

Consider using a facilitator who's not closely associated with the spaces, services, or other topics that will be discussed in the focus group. For example, you may want a non-library staff member to lead a focus group about a library's spaces and services. Having a facilitator removed from the issues for discussion may help the participants share honest feedback.

STEP 6

RUN THE FOCUS GROUP

Follow these tips during your focus group discussion:

- At the start, provide the group with a brief introduction to the makerspace, purpose, and process.
- Try to stick to the questions you prepared. You may, however, occasionally want a participant to elaborate on a comment by asking additional follow-up questions.
- Consider showing relevant imagery to encourage discussion. During our pilot program, we showed all of the focus group participants a collection of pictures illustrating a broad range of maker activities and asked them questions about their interest in these activities. These images sparked a lot of discussion and helped participants understand what we were talking about.
- Make note of factors that might help you later to interpret your findings, such as passionate comments, body language, or nonverbal activity. Watch for head nods, physical excitement, eye contact between certain participants, or other clues that would indicate level of agreement, support, or interest.
- Try not to react personally to what you hear. If participants don't like a particular activity or service, they may say so in the bluntest terms. Avoid the temptation to react to this candor in an audible, animated way.
- Try to encourage participants who may be reticent to speak. You may say, "I would love to hear from people that haven't had an opportunity to speak yet."
- Finish the session with questions allowing patrons to supply any additional thoughts and ideas.

STEP 7

SEND THANK-YOU NOTES

Send participants a thank you afterward, and consider inviting them to an event in your library in the near future.

STEP 8

REFLECT

As soon as you've finished, try to take time to debrief with members of your staff. Discuss your overall impressions of the group's responses and make note of any comments or nonverbal communication that the notetaker or audio recorder may have missed. This is also a good time to jot down any themes that emerged during the discussion, while everything is fresh in your mind.

TOOL

FOCUS GROUP QUESTIONS

Naturally, the questions you ask will be unique to your community and library, but we also provide sample questions to consider community groups.

TOOL

FOCUS GROUP FACILITATION SCRIPT

If you (or your staff) have never run a focus group before, we provide a sample script to use when facilitating the discussion.

Alternative Methods

Perhaps gathering a focus group together isn't quite the right approach for your audience or community. Our libraries use a variety of methods to build relationships and trust while also gathering valuable information about community needs. Here are some alternative ideas:

- **Conduct individual interviews.** Try asking your target audience to hop on the phone or a video conference for a brief 15-minute interview. If you don't know where to start, try putting out a short survey to collect some information and ask anyone who is willing to be part of a brief interview with you to share their contact information.
- **Leverage your advisory board.** Think about utilizing the members of your advisory board to help outreach, recruit individuals for focus groups, or even conduct individual interviews. Capitalize on the personal relationships and connections they have. If you have a youth advisory council, tap into them as well to help gather the information you need.
- **Meet people where they are.** Visit some of the organizations (e.g., school, senior center, cultural organization) you identified on your Maker Ecosystem Map and attend their events, classes, or meetings. Ask if you can have a portion of their meeting/class time to ask a few questions of the audience.

Interpreting What You Heard

If you were able to audio-record the session, transcribe all of the focus group comments. Consider using a digital tool or app like Rev, Otter.ai, or TranscribeMe. If you plan to transcribe yourself, keep in mind that it can be quite time-consuming!

Consider these notes as you analyze your results:

- If you conduct more than one focus group, rearrange the comments so that you collate the answers for each interview question.
- Look for thematic patterns and identify ideas that occur again and again in responses. Then create categories of topics based on these themes. Note that sometimes the same basic idea occurs in answers to multiple questions.
- Identify quotations that illustrate each theme.
- Write your findings in an engaging narrative. This document can be shared to help showcase why your community needs a makerspace and the rationale behind your audience and programming decisions.

DEFINE PURPOSE AND TARGET AUDIENCE

As you gather and synthesize data from people—in focus groups, staff meetings, and more—you develop insights into their needs and motivations. Use the **People and Purpose Tool** to help you synthesize the information you collected. This information will help you define the problems or needs of your target audience and the outcomes you hope to achieve.

At this stage, you'll need to draft a few key statements about the people you hope to serve with your makerspace. Collaboratively crafting precise language to guide your work will help you stay the course, maintain focus through this process, and communicate about your work to others. The steps we outline in this section will lead you through a process to build clear statements and questions about who you want to serve through your makerspace and why.

Chart paper and colorful sticky notes, like these ones from JFK Library, can be helpful as you interpret the focus group findings with your team.

how to IDENTIFY TARGET AUDIENCE AND DEFINE PURPOSE

STEP 1

GATHER YOUR TEAM

These might be your fellow staff members, or, if your library is very small, you might need to enlist the help of some volunteers or colleagues at other branches. Conversation and collaboration during the following exercises make the process richer and more productive. Crafting these statements can be very challenging to do on your own and may lead to statements that are biased by your own ideas and preferences.

Start with a detailed review of your notes and transcripts from the focus groups you conducted, and have a discussion with your team. What messages were coming through? What stories were shared? What passions emerged? What barriers did people describe? Who is left out and why? Allow participants to review the themes that emerged, and name each one with a word or phrase that describes the issue they have in common.

Discussions like this might amplify problems or challenges that people in your community face. These issues might be connected to transportation, economics, lack of resources, etc. Talk about what you might know already about the background of these ideas or issues. Although it's not easy to do, try to avoid the temptation to immediately think up solutions, and instead focus more on the reasons why the problems exist.

STEP 2

CREATE AUDIENCE STATEMENTS

Then challenge each team member to fill in the blanks in the Audience Statement sentence below, using their own words to describe who the maker program will be for and what need it could serve. Each one of you might have your own idea, and that's okay at this stage. Remember, this is an exercise to identify who has a need, and the underlying belief about that need, but not how your program might help address the problem.

Fill in the blanks below to create an Audience Statement:

_____ need/want/have
WHO
_____
WHAT IS MISSING OR THE PROBLEM
but/despite/because of
_____.
UNDERLYING BELIEF ABOUT THE NEED

For example, you might come up with statements like:

> Teens need access to digital media equipment and software because they're really interested in creating their own YouTube channels and recording original music.
>
> Seniors living alone need more social connection and engaging activities because they're isolated, on limited incomes, and prone to depression.

Give each team member a chance to write one or two Audience Statements using this framework. Once penned, share them with one another and give yourselves time to think about them before reconvening.

TOOL

PEOPLE AND PURPOSE

This tool is a worksheet that explores the concepts in this section and prompts you to define your primary and secondary audience while also challenging your team to consider what kind of attitudes and behavioral qualities you hope to encourage and support. You'll develop an Audience Statement, Environment Statement, and a Framing Question.

how to IDENTIFY TARGET AUDIENCE AND DEFINE PURPOSE *continued*

STEP 3

DIG DEEPER

Use the time between meetings for each team member to dig deeper and seek more information about the challenges and opportunities of the audience you're considering. Request input from colleagues, family, and friends, or go out into the community to gather more information.

There may be valuable takeaways from these follow-up investigations that can inform the direction you take. The more you understand the people, what motivates them, and what barriers they face, the better you can put their needs at the center of your makerspace design.

STEP 4

REVIEW YOUR LIBRARY'S MISSION AND VISION STATEMENTS

Understand the goals that are stated in your library's most current strategic plan, if there is one. What are the values stated in these documents? What is your library as a whole working toward? As you define your own maker program's purpose and decide who you're serving, keep in mind how you're working to help your library achieve its overall mission, and let others know how your efforts contribute to that work.

STEP 5

CRAFT ENVIRONMENT STATEMENTS

Reconvene the team to share their ideas and discoveries, as well as your thoughts on how each works toward the library's overall vision. Work together to rank which audiences are the highest priority, keeping in mind the skills and assets you have to leverage right now, both inside and outside the library.

Remember, this process doesn't exclude other audiences from benefiting from your makerspace. But our motto is to "start small," so when you focus on a primary and secondary audience, it helps to keep things manageable as you begin. This method allows for new audiences to emerge organically as the project takes shape and the community begins to learn more about what you're doing.

Then fill in the blanks below to craft an Environment Statement:

> This maker environment helps support people to be/feel _____ (*FEELING/DISPOSITION/QUALITY*) because _____ (*UNIQUE ASPECT ABOUT THE PROGRAM DESIGN OR ATMOSPHERE*).

For example, you might come up with statements like:

> This maker environment helps support people to be collaborative because they're able to work together in a shared space.

> This maker environment helps support people to feel confident because it gives participants a safe place to try something new.

how to IDENTIFY TARGET AUDIENCE AND DEFINE PURPOSE *continued*

STEP 6

CREATE YOUR FRAMING QUESTION

Now it's time to take those two parts—the Audience Statement and the Environment Statement—and set up your Framing Question. You'll use this as the starting point for the next stage of your program development, which is brainstorming and prototyping.

This framing question sets some boundaries for what you want to achieve. Again, we want to start small, so choose one audience, one problem, and one intended outcome. That being said, you may have two very distinct aspects of your maker programming. Don't be afraid to create two questions if you need, one for each audience or need.

Fill in the blanks below to create your Framing Question:

> How might we design a maker program for
>
> _____
> *WHO*
>
> that addresses the need
>
> _____
> *NEED OR PROBLEM*
>
> and fosters/cultivates _____ ?
> *FEELING/DISPOSITION/QUALITY*

For example, you might come up with a statement like:

> How might we design a maker program for young children in our community that addresses the need for quality resources and fosters creativity and hands-on learning?

Here's an example where a separate sentence was created for each main audience:

> How might we design a maker program for teens that addresses the need for a safe, positive, enriching recreational and social space and fosters collaboration, innovation, and learning?
>
> How might we design a maker program for adults that addresses the need for free education and training and fosters the development of community and new personal and professional skills?

STEP 7

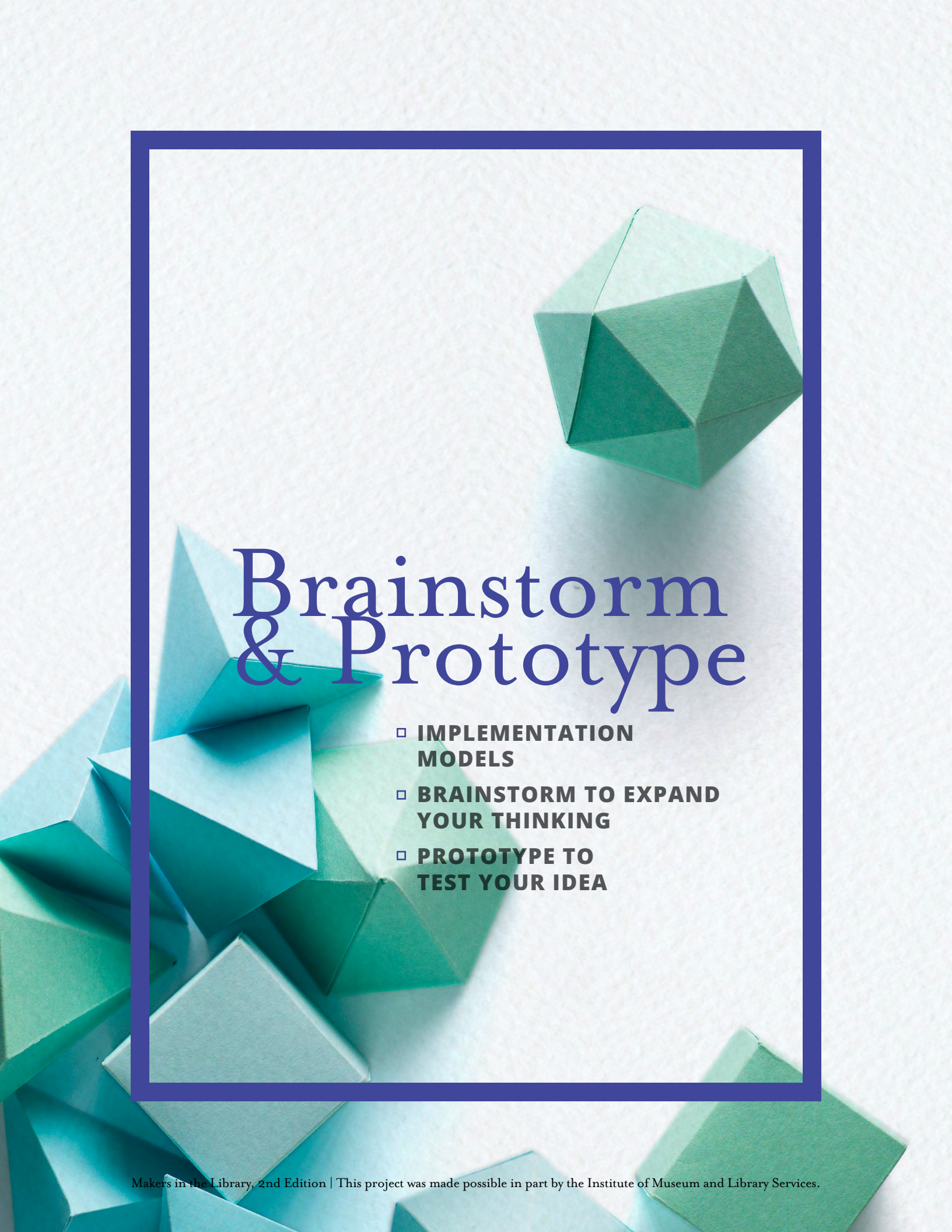
SHARE YOUR FRAMING QUESTION WITH COLLEAGUES

Consider posting a printed version of the Framing Question in the office. Listen for feedback and ideas, or place a suggestion box or writing pad nearby to collect input. Over the next several months, your team will move ahead imaginatively, developing and testing different ways to meet the needs you've identified through this exercise.

The process we've outlined is flexible and adaptable, so don't worry, you can revise your Audience Statement, Environment Statement, and Framing Question as you go. This design thinking-based approach allows for frequent reflection, revision, and review.

Later, if you feel like you set out down the wrong path, regroup, listen again, and redirect your team. Making is about having the courage to learn from experience, being willing to take risks, embracing failure as a way to learn, and trying it differently the next time. For now, it's helpful to start with a common purpose that you can all articulate, even if it changes a few months down the road.

A makerspace could help us to learn more about our community and what they really want. It gives us that opportunity for even further connection with our community.



Brainstorm & Prototype

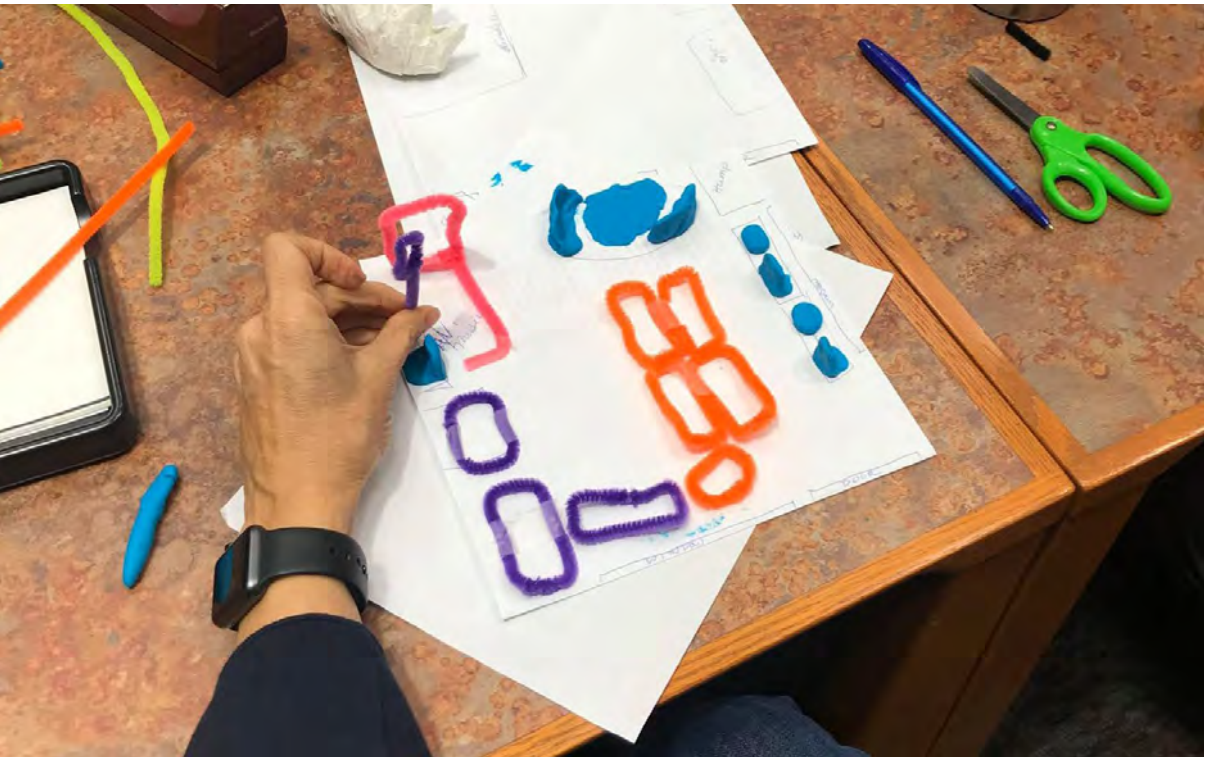
- IMPLEMENTATION MODELS
- BRAINSTORM TO EXPAND YOUR THINKING
- PROTOTYPE TO TEST YOUR IDEA

Makers in the Library, 2nd Edition | This project was made possible in part by the Institute of Museum and Library Services.

Brainstorm & Prototype

By this stage of the process, your team has listened to people, discovered the needs and interests of the community, and then defined a starting point for your work: the audience and purpose you serve. You've written a Framing Question, which includes the who and why for your maker program, but now it's time to start figuring out the how, what, and when. We begin by exploring the five makerspace implementation models referenced in this toolkit.

> *Our project isn't perfect, but we're constantly learning from it. We test and tweak things along the way until we find something that works for us.*



Prototypes are sometimes rough, quickly made models built from simple materials that help you think through a concept, like this makerspace layout prototype from the JFK Library.

IMPLEMENTATION MODELS

In our work with libraries, we've found that library maker programs and library makerspaces can be classified into categories, which we refer to in this toolkit as implementation models. Each model offers unique benefits and challenges, as outlined in this section. We also share real-world examples and pictures of each model, along with notes on the day-to-day functioning of these programs.

Maker Program Implementation Models

- Multi-Use Space
- Dedicated Space
- Outreach and Mobile Units
- At-Home Programs
- Community Events

Look at the benefits and challenges of the different implementation models and choose one way to move forward at the start. You don't have to stick with this choice as you progress. Our process will give you a chance to test out your approach to get a better sense of what the unique situation will look like for your library.

TOOL

IMPLEMENTATION MODELS AT-A-GLANCE

Use this tool to quickly compare the benefits and challenges of the models.

Multi-Use Space

A room or area of the library is quickly converted to serve as a temporary space for maker programming at a specific time. This could be a program room or an indoor or outdoor area at the library that can be set up to accommodate maker activities and materials for a set period of time, after which everything can be put away without too much difficulty. Tools and materials are often stored in closets or on mobile carts that can be rolled into the space and then packed up and moved out of the room when the program is over.

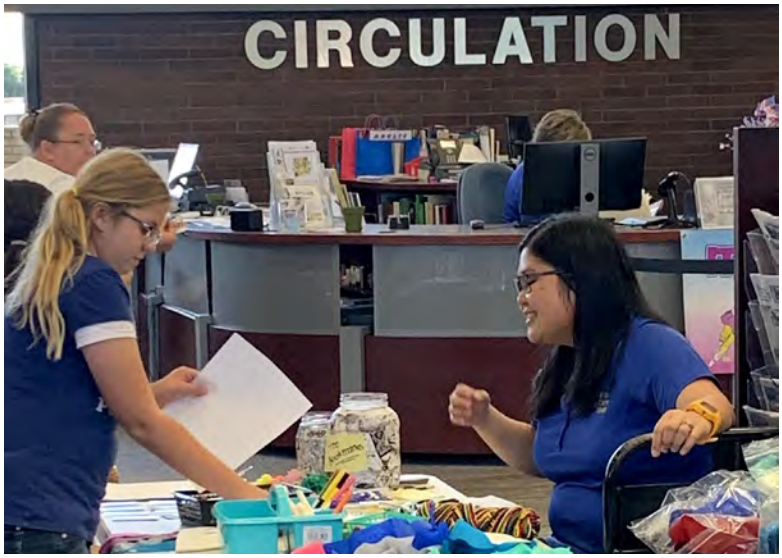
Benefits	Challenges
• Programs can be offered without a dedicated space, affording flexibility for libraries with limited space • Schedule can revolve around staff or volunteer availability, affording flexibility for libraries with limited staffing for maker programming • Doesn't need to be open all the time	• Scheduling around other programming • Time and effort to haul stuff in and out • Appropriate and accessible storage for times when program isn't running • Program less visible when not running • Less time or opportunity for patrons to explore the equipment

Exeter Library's multi-use program room is set up for makerspace activities a couple of times each week. The library has gradually been working to replace older furniture with new chairs and tables that are more flexible and easy to move. Staff have noticed how important it is to reserve empty floor space for children to build and test their creations on the floor, and to encourage easy movement for participants in the space. Although the room is used for many different programs throughout the week, there's a large bulletin board in the space dedicated to featuring information about past and upcoming makerspace activities.

Exeter Library's makerspace program happens in a multi-use space.

Sometimes the multi-use space is in the open public area of the library, as shown here at the Kings County Library (below, left) and the Ponderosa Library (below, right). One advantage of placing a maker program in a high traffic and high visibility location is how accessible and welcoming it is to patrons. Kings County Library experimented with the placement of furniture and activity centers. Now they have it perfected and can set up and break down very efficiently, with all materials loaded on carts in advance and volunteers helping to set the furniture in place during the hour before the program starts.

Ponderosa Library sets up programs, like this after-school coding activity (right), in the center of the small library's main space. Sometimes staff bring out laptops, sewing machines, or cardboard construction, depending on the monthly theme they've planned. The activities are offered to all ages and bring in a loyal following of local families. Materials are kept organized in labeled bins to help with easy set up and clean up, and computers are kept on a dedicated cart.



One of several activity centers for Maker Monday at Kings County Library is set up near the circulation desk.

A coding program is held in the open public space at Ponderosa Library.

In the Foster City Library, the versatile program area called Teen Spot is often used to set up maker programs. Staff move convenient tables-on-wheels into place, chairs are placed around, and sewing machines are set up for an all-ages sewing class. With the demonstrated popularity of maker programs like this in their multi-purpose program space, the library administration is now making plans for a dedicated space in the future.

Before set up and after, with the sewing program underway, in Foster City Library's multi-use space.

Dedicated Space

A room or area in the library is either specifically designed for or converted (e.g., an underutilized computer room) into a permanent space for maker activities, tools, and materials. A dedicated space allows for programming to take place anytime the library is open and provides adequate room for participants to work and collaborate.

Benefits

- Designed to accommodate needs of making activities and the storage of supplies (e.g., ventilation, electrical supply, sinks, secure equipment)
- Readily available for staff training
- Greater visibility in the library
- More opportunities to offer an open studio or drop-in program

Challenges

- Might require dedicated staff member
- Higher cost to build and maintain
- Could limit capacity for participants
- Open studio or drop-in programming is challenging for staff to multitask between space management, customer service, and instruction support

The Makery is a dedicated makerspace housed in a former computer lab at the JFK Library. The space includes tools for digital fabrication, audio and video recording, sewing, soldering, VR, and gaming. These photos show before (left) and after (right) the transformation.

At Providence Public Library's Workshop, they've designed a community space dedicated to fostering creativity, collaboration, exploration, and innovation. The Workshop is designed to facilitate hands-on, experiential learning for individuals of all ages. From youth to adults, everyone is encouraged to engage with maker tools and technology,

explore new skills, and unleash their creativity. The Workshop is outfitted with state-of-the-art facilities, including cutting-edge tools for tinkering and crafting, and a professional-grade sound studio for audio production and recording.

Programs help patrons learn a variety of skills, from the basics of sewing all the way up to advanced digital fabrication and technology skills. Staffed by coordinators and teen interns, the makerspace offers dedicated open studio times for all ages and designated time for adults only, along with a series of training workshops on Mondays for up to 10 participants at a time.

Lakeport Library had an underutilized, fenced-in patio directly off the children's section. They were able to transform the space into a delightful area for kids to explore science and nature using their senses, with planters and worm boxes, a water table custom-built by a volunteer, and tools that help kids explore sun and wind power. Shown is a diagram that was posted and was very helpful in recruiting volunteers for the new kids patio. For more information on the finished product, refer to the description and images of Lakeport Library in the **Snapshot** section.

The Workshop at Providence Public Library is a dedicated space for making.

Lakeport Library shared their vision for an outdoor makerspace and recruited volunteers with this poster.

Outreach and Mobile Units

One way to reach a broader audience is to offer your maker activity outside the parameters of your library by bringing maker tools and materials to people in locations like schools, nursing homes, or clubs. This could look like a facilitated hands-on experience or a pop-up open studio. A local school might invite the library to provide fun ways to learn STEM or cultural arts with hands-on experiences, especially if they don't have the funds to arrange a field trip for their students. A retirement home might want to host a session at their facility introducing seniors to new technologies, considering they might have trouble getting to the library.

Taking your maker program on the road requires a mix of logistical planning, organization, and routine maintenance. It often requires a flexible mindset because setting up a program in a different place can come with unexpected challenges. An emergency kit with an extra extension cord, some basic tools, a roll of duct tape, and cleaning supplies can make the difference between a stressful and a successful program.

Benefits	Challenges
• Raises visibility of the library in the community and maker ecosystem • Able to reach and interact with audiences not usually at the library • Opportunity to change public perception of what libraries do • Enhances existing partnerships and helps build new ones	• Time and effort to haul stuff in and out • Might require a special vehicle • Activities must be engaging but relatively quick • Staff are off-site for the event and not available to work inside the library

Rural Bellaire Public Library offers a STEM Petting Zoo program in their library quarterly, but as an outreach event, they repeat the program at the local elementary school every few months for their afterschool program. Library staff bring a variety of STEM supplies and maker tools and lay them out on tables for the kids to try. To facilitate the program, they bring one library staff person to complement the individual(s) that the school supplies for supervision. Students are given challenge cards, in some cases, to try and make something with the 3D printer, use a coding program to navigate robotics toys through a maze, or use quilling tools to make pictures.

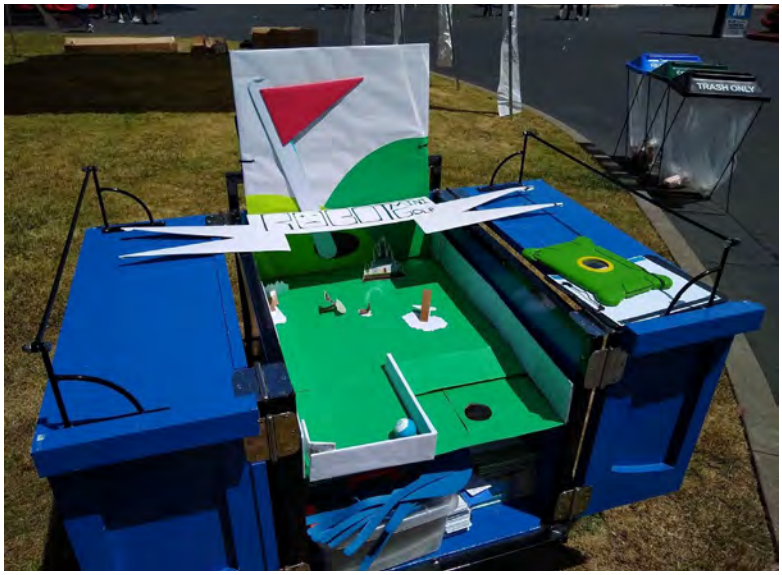
After successfully offering a Lego Club for elementary-age kids, the Evanston Public Library couldn't help but notice that the caregivers and parents often couldn't resist getting their hands on the Legos too. This led them to try a new kind of outreach and launch a Lego Club for adults at a local brewery. Not only does the program offer lots of great bricks and minifigures to experiment with, it offers a wonderful social experience for adults with an excuse to be creative and playful.

Adults enjoying time tinkering during Lego Club.

When they sought out a venue to host this event, the local family-friendly brew pub was happy to offer the space, and the library has found it reached a brand new audience by hosting the club in this new setting. The setup is straightforward: The Legos are in two large bins and participants load up a tray or lunch bag with a few handfuls to bring back to their seat. After that, the building, conversation and fun begins.

Many libraries set up maker program-in-a-box kits that contain all the tools, materials, and instructions to lead an offsite activity with a group. For example, you could have a kit with everything to lead a stop-motion animation workshop, or materials for a paper circuits activity. After use, these kits require an inventory check to replace or repair any item that is missing or damaged, and restock the consumable materials used for that activity. Tulare County Library invested in a set of maker program boxes that are not only useful to bring programs to other local organizations, but also help circulate program materials between the branches of their large, rural system.

In some library systems, maker outreach programs have proven so popular that their bookmobiles have added maker supplies and equipment, while others have garnered the resources to develop specially outfitted makerspace vehicles. The electric Makermobile at San Mateo County Library houses three technology carts, outfitted with tools and materials, including a laser cutter, 3D printer, laptops, iPads, DSLR cameras, coding robots, music-making elements, and more to bring programs to schools, parks, and other public spaces. Anaheim Public Library also has a new **STEAM mobile**, which rolls



San Mateo County Libraries bring a Sphero robot mini golf game on a trailer pulled by a bike.

out hands-on art and science activities throughout their city with a specially outfitted van to make the program easily portable and accessible.

Evanston Public Library's Makers on the Move program goes out to local middle school libraries every month and takes over their space during lunch periods. They set up six different stations with the goal to expose students to different STEM opportunities and help build their confidence. This gives students a taste of the program offerings in the hope that they'll get curious and seek out a more enhanced experience at the library. At the end of the school year, during the month of May, they head out to each middle school and take over the entire school for three days, giving them a taste of the library's teen program LOFT. They bring the book van out, host activities, set up big lawn games, and promote summer reading. Since the van has a backup generator, they can power sewing machines, Cricut equipment, and more. The teachers and students look forward to it every year and it's a great way to kick off the summer.

Corona Public Library takes their makerspace program out in the community.

If purchasing a vehicle for an outreach program is beyond your budget, check with your city or county for a possible resource. Corona Public Library works in conjunction with the municipal Recreation Services Department to bring programs in a mobile vehicle around the city.

At-Home Programs

To support makers who tinker at home at their own pace, many libraries now offer tools and materials through "Library of Things" collections, which provide patron access to equipment that may otherwise be too expensive or specialized for them to purchase themselves. The range of what you might find in a Library of Things collection is wide and varied—from cake pans to VR equipment to gardening tools and more. At the Pikes Peak Library District, staff have designed specially curated "**Discovery Kits**" that allow families to engage with circuitry, robotics, and crafting. They also offer **video instructions** for an assortment of projects to make at home. Similarly, the **Dabble Box** at L.E. Phillips Memorial Public Library offers a diverse collection in their Library of Things as well as a selection of how-to creative activity guides to download and make at home.

Benefits

- Doesn't limit participation to a specific day and time
- Library of Things program offers more time and flexibility to make things over several days
- Potential to reach people who can't attend a library program
- With online tutorials, patrons can repeat the program as often as they wish
- Patrons can go at their own pace

Challenges

- Library of Things program requires ongoing administrative staff time for managing the collection
- When loaning supplies, tools may be broken or pieces missing when returned to the library
- May require specialized skills (e.g., for staff to produce video content or for patrons to use a tool independently)
- Digital divide makes virtual programming inaccessible to some

Made popular during the pandemic, individual single-use take-home activity kits are one way to deliver individual art or craft activities to the home. These kits are labor-intensive to assemble, and can be costly since most of the materials can't be reused, but in some situations they can be the perfect way to get materials to people who wouldn't otherwise have the opportunity to make. For example, Bellaire Public Library recently distributed art kits that included paints and 4" by 4" canvas squares for patrons to use to create art and, if they wish, bring the picture back to display at the branch in their Tiny Art Show.

When San Diego Public Library returned to in-person programming, the IDEA Lab moved away from the Zoom and maker kit model. However, recently, the Lab has started to offer a limited number of "Take and Make" kits for patrons to pick up. These kits have supplies for a project that patrons can complete from start to finish.

An example "Take and Make" kit from San Diego Public Library. They ask for some materials (like the embroidery hoop in this example) to be returned to the library after use.

If the pandemic taught us anything, it was that there are patrons and community members out there who are unable to access library services. Before the pandemic, the Bellaire Public Library led a successful program called Sensory Storytime for Disabled Adults. Working with local adult day care centers and opening it to anyone with a disabled adult in their home, they spent one hour each month reading stories, singing songs, dancing, making crafts, and sometimes had lunch together. Crafts were simple maker projects that allowed the participants to work on skills (like painting, or creating a button, etc.) they could enjoy and take something home with them.

So, when the pandemic lockdown happened, it seemed like they could no longer work with this population until they figured out a way to launch the program via Zoom and distribute materials for hands-on activities in advance. Not only did this fill a need for the local disabled community during lockdown, it also proved so successful that the program continues as a remote offering even after the pandemic ended, and often includes local participants and people from other states.

Anaheim Library also continues to offer engaging and creative activities via video recordings aimed at children, like their **STEAM Adventures** series and their **If/Then Women in STEM with Miss Yvette** videos.

At the rural Lakeport Library, lack of transportation makes it hard for many to access the library building, so the library invested in Creativebug, an online subscription-based collection of digital arts and crafts tutorials. The tutorials not only helped patrons learn techniques at home, but staff used some of the video tutorials in their Saturday morning Creative Club sessions, which also reduced staff time investments because they didn't have to develop a full arts program from scratch. Inspired by the videos, maker participants then expanded their creative pursuits beyond the online instruction.

Community Events

Gatherings where local makers and creatives bring their creations and projects to show off and get inspiration from each other are often called Mini Maker Faires or Maker Festivals. The library can be the host organizer of this type of event, or can simply have one of the booths at another organization's fair. These events take lots of planning, logistics, and promotion, but can pay off with an increased excitement generated from showing off the many technical skills and creative pursuits present within the local community. Different from a craft fair, which typically involves local artisans selling their wares, these kinds of fairs instead demonstrate inventive approaches, tinkering, and technologies both old and new, sometimes inviting people to try their hand at making something, too.

The Gilroy Library held its first ever Mini Maker Faire in 2019. An estimated 3,000 attendees participated in hands-on experiences presented by schools, artists, museums, and independent makers.

Benefits

- Raises visibility of the library in the community and maker ecosystem
- Offers ability to reach and interact with audiences not usually at the library
- Showcases and celebrates community skills and creative abilities
- Enhances existing partnerships and helps build new ones
- Promoting repair helps cultivate a more sustainable approach to living

Challenges

- May be time-consuming to organize if the library is the lead organizer
- Logistical challenges (e.g., permits, space, electricity, Wi-Fi, weather)
- Materials cost can be high for large-scale events
- Time and effort to haul stuff in and out
- Often requires recruiting lots of volunteers
- Staff may be off-site for the event and not available to work inside the library

Evanston Public Library's team is especially proud of their work as the lead partner with local schools and other organizations through an annual citywide STEM Challenge series. For 8 weeks, staff and their partners teach teens at schools, out in the community, and in the library how to create an interactive cardboard game by coding motors, LED lights, buttons, and more. Students follow a design process and learn important applied math skills, block coding, and physical computing. No experience is required, kits are free, and it's open to all 5th through 8th graders in the district.

To encourage more family involvement in the challenge, they also offer workshops for parents at a local brewery (Sip and STEM) and **online tutorials** that families can follow at home. At the end of the challenge, they host a Cardboard Carnival, where everyone is welcome to come out and tinker with the games that the students built. Evanston Public Library staff find that these citywide STEM challenges are successful because of the strong, collaborative partnerships formed by working with their local Maker Ecosystem.

Making is not only building from scratch, but also learning to understand how complex systems function. This skill comes in very handy when a household repair is needed. Libraries have recently started offering periodic repair fairs, where skilled electricians, carpenters, bike mechanics, and other tinkerers offer volunteer services for a few hours, and people come with their bikes, broken appliances, or household goods to see if they can be fixed.

At Pikes Peak Library District, they have several wonderful, skilled volunteers who regularly assist with their Repair Cafés, along with additional help from the community-run Pikes Peak Makerspace. Fix-It Fair is a quarterly program at the Midtown-Carnegie Branch Library. Skilled volunteers from the community mend and repair everything from Kitchenaid mixers to tote bags, and more! It's a great opportunity for the community to come together and to keep items out of the landfill. Some libraries offer repair fairs at their library, while others host them at another local place that best accommodates the kinds of equipment needed to complete the repairs.

A Pikes Peak Repair Cafe volunteer works on fixing a small appliance.

Community parnterships and volunteer experts contribute to the success of the Springfield-Greene County Fix-It Fair.

BRAINSTORM TO EXPAND YOUR THINKING

Once you've landed on your Framing Question and thought about the variety of types of makerspace programs you could offer, gather with colleagues to brainstorm what possible solutions meet the needs of your audience(s). There are several ways you can facilitate a brainstorming session, and we've suggested one option below that could easily be part of a regular staff meeting. At the outset, be sure that everyone is clear on what problem you're attempting to solve. Keep your Framing Question front and center for this exercise.

BRAINSTORMING

A group activity where you quickly and spontaneously generate a large volume of possible ways to solve a problem.

This part of the process should stretch your imaginations and generate a wealth of ideas. As a leader of the session, be ready to not only listen and receive new perspectives, but even encourage ideas that might seem unconventional or impossible. It's important to allow the ideas to come freely without passing judgement on any suggestions—even concepts that seem outlandish, wild, or against the rules of the library.

Throwing the net wide and pushing the boundaries on possibilities spurs new thoughts and approaches that might never have been dreamed otherwise. The idea is to promote expansive thinking. One way to help break the ice is to ask people to start by brainstorming all of the ideas that *wouldn't* work. This method offers a fun and playful way to get started, and you may be surprised at what great ideas it sparks.

Brainstorming with your team can open doors to creative solutions. Here, library staff are engaged in a session during training at the Bay Area Discovery Museum.

Conduct a Brainstorming Session

There are many ways to run a brainstorming session with your staff. Here's one simple process you could use to get started.

- Provide the group with colorful sticky notes and pens.
- On a whiteboard or the wall, post your one-sentence Framing Question.
- Give everyone 5 minutes to generate as many ideas as possible to address this question, writing one idea per sticky note.
- Have participants post their notes on the board.
- Call out the ideas verbally or write them down and then read, review, and come up with more as the group gets warmed up.
- Ask the group to organize and sort the sticky notes, looking for similarities and differences. As you arrange them, which ideas stand out?
- After the meeting, write all of the ideas down and send them out to the group so everyone can give it more thought before you gather again. Some ideas need time to marinate before you can move forward.

Visit Other Makerspaces

At this stage, it's helpful to pay a visit to one or more other makerspaces. It's remarkable how many insights and ideas you can gain from seeing how other spaces are arranged and run. Keep in mind the makerspace you visit doesn't necessarily need to be in a library, though that would be great. Seek out places on your Maker Ecosystem Map, perhaps at a local school or college, community space, or museum. Or try taking a "virtual tour" by searching for library makerspaces online and exploring pictures or videos of their programs. The Library Makers online community is a great place to make connections with people from other library makerspaces.

If you're fortunate to visit at a time when people are busy making things, you can simply observe what's happening, noticing how people move around the space, how they know what to do, how they get the tools and materials they need, and whether they're guided by a facilitator. Take note of many physical details, including storage, signs, equipment access, ventilation, seating, and lighting. And pick up any pamphlets, flyers, or calendars of upcoming events.

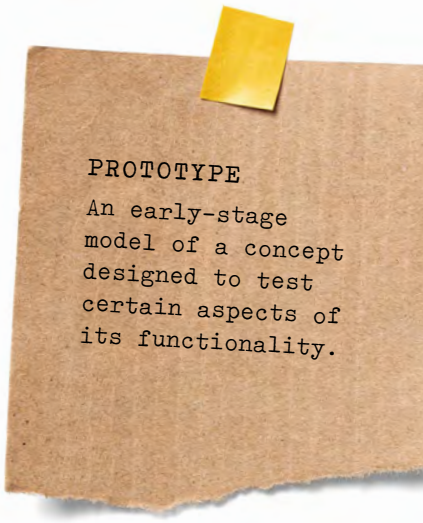
Be sure to introduce yourself to the team who operates the makerspace and let them know you're in the planning stages for a library makerspace. You may be surprised by their willingness to share and offer advice. Even if you're conducting a virtual visit, reach out and ask a few questions via email, phone, or video meeting.

TOOL

FIELD TRIP NOTES

This tool offers factors to consider during your visits and helps you keep track of the ideas you gather from these experiences.

PROTOTYPE TO TEST YOUR IDEA



We recommend you start small and try out a few ideas first to give you a sense of how they'll resonate with your audience before spending a lot of time and money

with a lot of information that may be useful to gain more support for your idea and even to get funding.

Bring the brainstorming group back together, review all of the ideas you came up with, and discuss the different approaches for your future programming. Together, pick one or two (or more) ideas that might be worthy of a quick, rough test for viability. Talk about how you might set up this prototype; then craft a model to mock up the idea, or run a low-cost, short-term viability test. Always keep in mind the original problem you were aiming to solve and decide what factors to monitor with your prototype, so you can have some measure of its success. Also, keeping good records provides data to guide the decisions you make about your program—and offers the chance to take a creative risk by trying a brand-new approach, with a minimal investment of time and money.

Sample Prototype Scenarios

INTERGENERATIONAL MAKING

You've come up with the idea of having tweens learn sewing from senior citizens. To prototype, you could invite one senior citizen and one or two tweens to come to the library and try sewing a simple project together. See how it works, gather their input, and learn what was great and what was hard about the intergenerational project.

Gather data on: target audience, delivery method, type of activity

MAKER ACTIVITIES OUTSIDE THE LIBRARY

You've decided that the farmer's market is a great venue to reach new audiences for creative programming. You could sign up for a table and set up a simple creative project there for people to experience. Then talk to them about the idea of the makerspace. You could potentially learn about whether outreach at the farmer's market is worthwhile, and if people seem to enjoy the hands-on project opportunity in this different setting.

Gather data on: delivery method, type of activity, venue, timing

TOOL

PROTOTYPE FRAMEWORK

This tool helps you plan your prototype and keep track of the results.

MAKERSPACE ON A CART

You're wondering how to efficiently store and transport materials for family programs. You decide to try converting a book cart or a media cart into a mobile makerspace. Determine how much space you need, what type of storage you need, and how you might arrange items and label them so it's easy to use, both for you and the families. Do containers need to be covered? Harnessed to the cart to prevent them from disappearing? Easy to rearrange? Is the cart flexible for multiple projects, or do you have to rearrange and restock every time?

Gather data on: delivery method, type of activity, space design

WORKING WITH PARTNERS

Invite one of your existing library partner organizations to collaborate on planning and leading a creative activity in the library. Can they help run the activity? Provide any supplies or equipment? Help bring the audience to your site?

Gather data on: staffing models, delivery method, marketing

SHARING MAKER BOXES WITH ANOTHER BRANCH

Collaborate with another branch to test-run the format for a maker box. Take one maker activity that you have materials for on hand, try packing all the needed supplies and simple facilitation notes in a box, and send it to your colleague. Have your colleague first provide feedback to you about whether the materials arrived in good condition, and if they understand your notes for how to produce the activity. Next, they could test-run it with staff members or offer a trial run with a small group of patrons, and then provide feedback on the activity itself.

Gather data on: format, delivery method, type of activity

LIVESTREAM VS ASYNCHRONOUS VIRTUAL PROGRAM

Test two ways of offering a virtual activity online, via livestream and a pre-recorded session. Try to limit the number of variables so you can better compare. Did the audience interact during the livestream? Check the number of views to see which method reached a larger audience. Was one more difficult to facilitate and produce than the other?

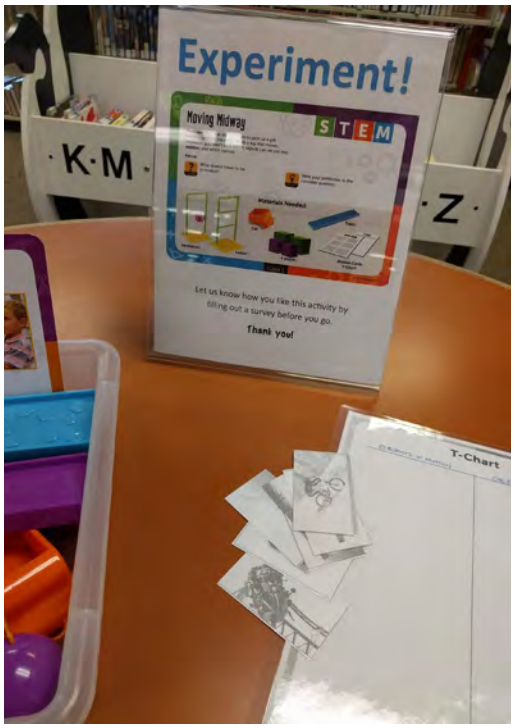
Gather data on: delivery method, type of activity

Prototype Examples

Seeing how other libraries approach their prototypes can often be helpful with shaping yours. Here we share prototype examples from four libraries: Lakeport, Exeter, Blanchard, and Erie Community Library.

LAKEPORT LIBRARY

The team at Lakeport Library set out to design a maker program for young children that would foster creativity and provide opportunities for hands-on learning. They wanted to know if a passive program set up in the children's section with science manipulatives would attract young patrons. They also wanted to know if signage would be enough to guide them to engage with the activity and if the materials would supply multiple uses.



Lakeport Library's Force and Motion prototype tested a passive program in the children's area.

Using a science activity set called Force and Motion that they had on hand, staff set up an activity center in the children's area, with guided instructions. The location was chosen because it would be the first thing people see when they come into the children's area, providing maximum visibility for patrons, while also being clearly visible for front desk library staff to keep an eye on. Within one hour of setting up the program, all the materials (except the surveys) were gone and spread across the room, and the area had to be reset. This happened multiple times, where people would take materials to the

smaller tables nearby or to other tables around the room. In total, library staff reset the materials nine times.

Overall, this prototype revealed that children did interact with the materials. Despite it being a "passive" program, staff would need to be involved to keep materials in order. Also, it prompted them to consider moving the prototype to other areas in the room, as patrons may have been moving the materials because they felt uncomfortable sitting in the doorway, or the table may have been too tall for younger children.

EXETER LIBRARY

Exeter Library wanted to offer programs for children that would introduce STEAM (science, technology, engineering, arts, and math) concepts in a way that would encourage playfulness and creativity. They had also heard from community members that there was a strong interest in robotics. The prototype was designed to find out how successful potential robotics programs facilitated by an outside partner would be, if passive or facilitated programs work best, which days of the week and times were optimal, and what the ideal setup and arrangement of furniture would be.

Exeter Library's robotics prototypes revealed that ample floor space is needed for the activity.

For the first prototype, they invited the local ImagineU Museum to the library to set up and facilitate an activity while staff observed and talked to patrons. The ImagineU staff brought three different robotics activities, which worked out well, and children enthusiastically tried them all. This helped the library realize that they could combine various robotics offerings into one program. Staff were also surprised that the children didn't need as much guidance as they initially thought, and the unstructured environment worked well.

They also noticed that kids needed ample floor space to participate. So, for the second prototype, they moved furniture out of the room and offered a Dash and Dot robotics activity. Children naturally helped each other without an adult coaching them to work together. Families reported they were *very* happy to attend and participate in the program, and they wanted to see more of this at their library. Staff learned that robotics

are of extreme interest in the community, that ample floor space makes a big difference, and that very little direct facilitation is needed.

BLANCHARD COMMUNITY LIBRARY

At Blanchard Community Library, the staff was looking for ways to offer a variety of STEAM activities that might promote innovation and creativity for their patrons. They set up a prototype activity called Slime Time, designed to test three things: if low-tech projects are as engaging to patrons as high-tech ones, if potentially messy projects were containable, and how effective youth volunteers would be.

For the prototype, elementary and tween participants were provided materials and instruction on how to create slime with borax, glue, and food coloring. Six tween and teen volunteers assisted throughout the activity, which included time for children to play with their slime. The library staff learned that it's never going to be quite as bad as you fear it will (the interest level or the mess afterward) and to not be afraid to try something risky (e.g., glue-based slime in a building full of books). Also, the volunteers were awesome, knowledgeable, and brought their own passions to the projects. Their findings relieved library staff of needing to be experts on everything because they learned that others in the community love sharing their interests.

Blanchard Community Library set up a messy materials prototype with the Slime Time activity.

ERIE COMMUNITY LIBRARY + CARBON VALLEY LIBRARY

Carbon Valley Library doesn't have the space or equipment for a maker program like the well-outfitted Erie Community Library's CLUB (Create, Learn, Understand, and Build) makerspace. So librarians decided to prototype a program collaboration and tested out a holiday program called Grumpy Gingerbread Person. The program was aimed at children aged 8 to 11 and took place in a meeting room.

Erie Community Library's 3D printer was carefully packed in the trunk of a vehicle and cushioned with blankets to minimize damage. It was then taken to the Carbon Valley Library, a public library located 15 miles away in Firestone, Colorado. The children were given a demonstration of how a 3D printer works while printing a gingerbread person cookie cutter. They then made cookies with their newly printed cutters while listening to a story. At the end of the program, the children got to take their cookie cutters and cookies home with them.

This prototype outreach program proved to be a big hit with the children and their parents, who also wanted to stay and participate. Although there was initial concern about how well the 3D printer could survive transportation, it proved to be unfounded. Upon setting up the printer at Carbon Valley, it didn't need to be recalibrated and could jump into printing the gingerbread cookie cutters without any issues. The prototype helped the library start planning for future collaborations and the sharing of makerspace equipment with other library branches.

Kids learned about 3D design and technology, and used 3D printed cookie cutters in the Grumpy Gingerbread Person program, a prototype collaboration between two Colorado libraries.

Document What Happened

One of the most important aspects of your prototype is to document the results. Documenting is imperative and has many benefits:

- Others will learn from your experiments.
- You'll develop experience, techniques, and best practices for collecting data that will be useful to you as your project evolves.
- Logging what you did and how it went provides a recorded history of programming that new staff can easily access and use.

You'll need to find the methods that work best for you, but we recommend you consider the following:

- **Take photos!** Make sure to take photos of your room setup, space, materials, and supplies before the event and how the space looked *after* everyone left. If you don't have photo permission for the attendees, try to get shots of the back of heads or closeups of hands engaging in the activity.
- **Record numbers of participants**. How many were from your target audience? A clicker counter is cheap, readily available, and can easily be kept in the pocket of staff or volunteers during the event to keep track.
- **Reflect immediately afterward**. We're all tired and exhausted after an event, but you can't underestimate the importance of taking 10 minutes to reflect with staff and volunteers and to jot down notes. You can always go back and put the details you gathered in a more formal format later, but you'll definitely forget things if you don't record them immediately. Use the questions on the Prototype Framework tool to guide your reflection.
- **Gather feedback from participants**. You may want to create a survey on a half sheet of paper, or set one up using an electronic format like Google Forms or SurveyMonkey. Make sure to think about translations if your target audience has non-native English speakers.

TOOL

PARTICIPANT FEEDBACK FORM

Feel free to modify or add questions to this form based on the specific items you want to test. We've also included additional resources in the Evaluate section of the Reflect & Refine chapter.

Next Steps

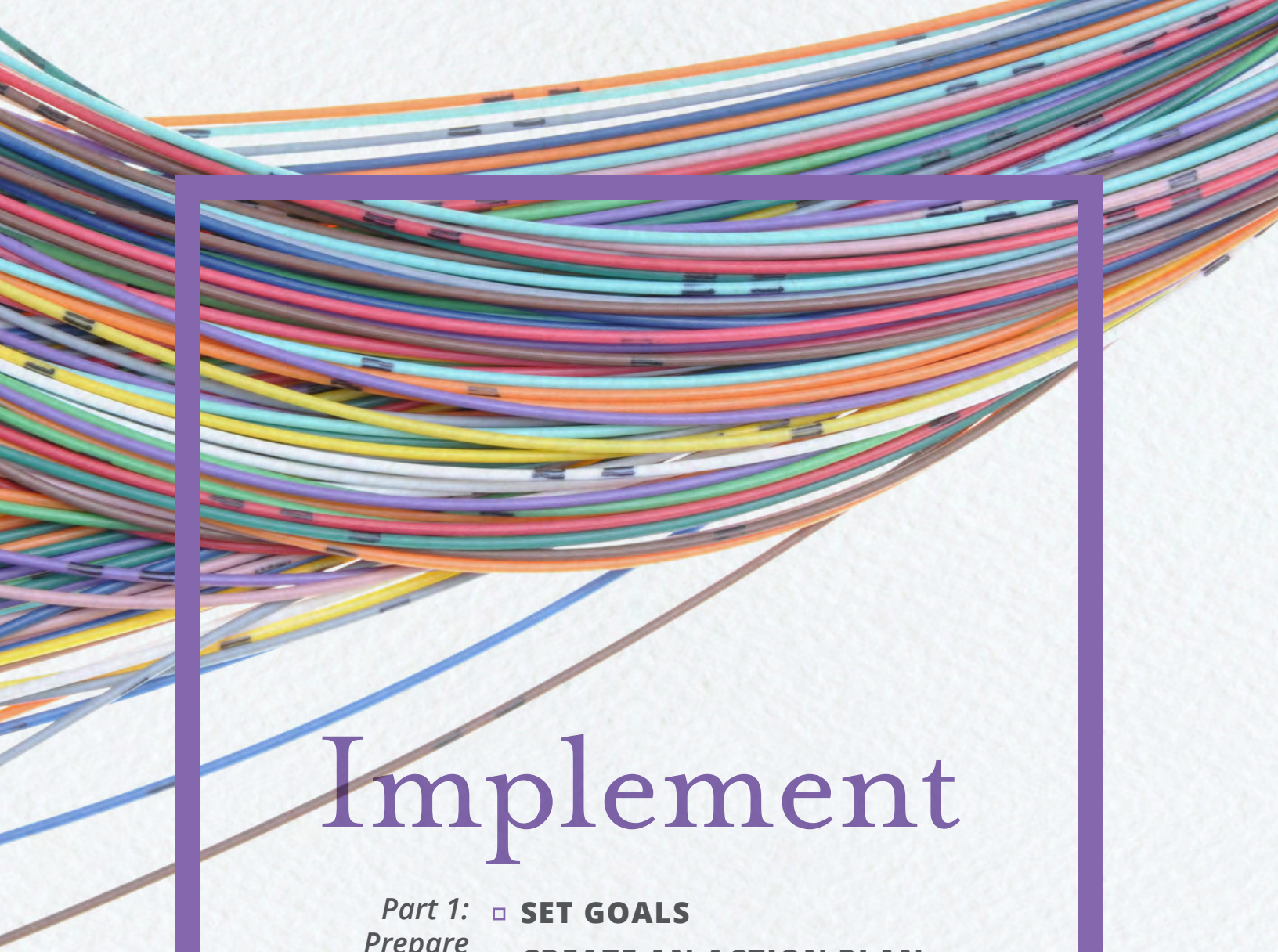
After you've finished your prototype, where do you go from here? In many cases, you may need to run a series of prototypes before you have a clear vision of where you'd like to go and what implementation model will work best for your library. There are so many variables when you're presenting a program (e.g., content, mode of delivery, audience) that can influence your results, but by paying close attention and making subtle changes as you go, you'll learn more and more about what works best for your unique community needs. And, in the long run, starting small is a much more economical and practical way to build your space and conserve your library's valuable time and money.

FURTHER READING

Reimagining Library Spaces: Transform Your Space on Any Budget was written by a school librarian with the school setting in mind, but it offers many ideas that translate to the public library setting, especially useful for programs designed for children and youth.

San Jose Public Library's Mobile Makerspace Guide shows how brainstorming and prototyping helped inform the development of their mobile makerspace, the Maker[Space]Ship.

How to Lead a Brainstorm on the TED-Ed blog is a great introduction to leading a brainstorming session if you've never done it before and need some helpful tips for how to ensure both the introverts and extroverts on your team can participate successfully.



Implement

Part 1: Prepare

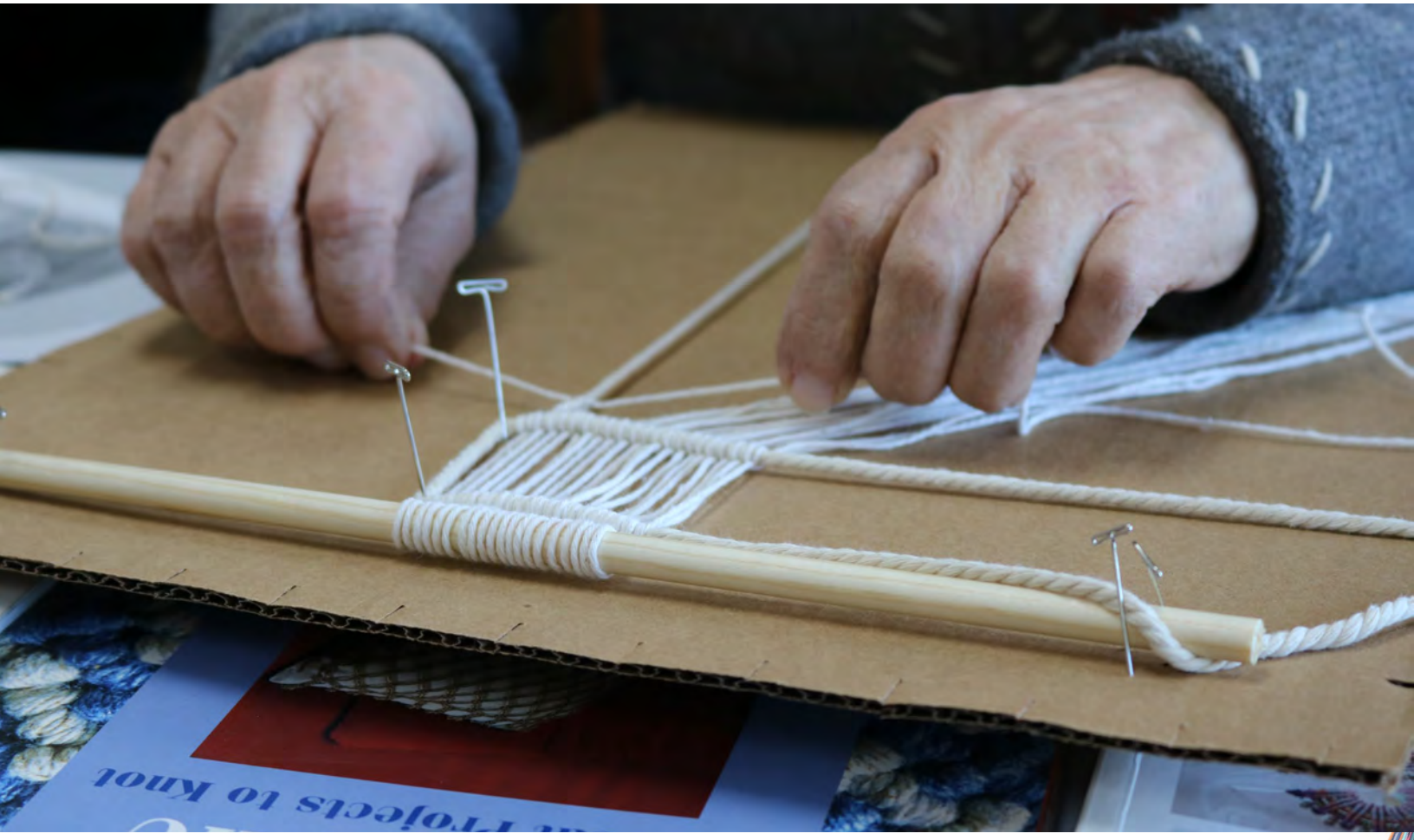
- ☐ **SET GOALS**
- ☐ **CREATE AN ACTION PLAN**
- ☐ **BUILD A BUDGET**
- ☐ **SELECT AND PLAN ACTIVITIES**
- ☐ **CREATE AN ENVIRONMENT FOR MAKING**
- ☐ **ENVISION THE PATRON EXPERIENCE**

Part 2: Launch

- ☐ **STAFFING**
- ☐ **TRAIN FOR SUSTAINABILITY**
- ☐ **OPERATIONS**

Implement

The implementation part of the process is about taking what you've learned so far and putting it into action to get your makerspace program started. To help you think through all of the steps needed to make that happen, we've divided this section into Part 1 and 2: Prepare and Launch. Part 1 starts with setting concrete goals and making a plan to achieve them, while keeping in mind your budget, the activities you want to offer, and the environment you want to create. Then, in Part 2, we move on to how to staff your space, along with the training and operational systems you need to have in place. As you embark on this phase of the process, use your Framing Question to guide you and decide what different implementation model(s) to embrace before diving into the finer details of launching your program.



Macrame is a popular low-tech activity at the Lakeport Library.

Part 1: Prepare

SET GOALS

Goals are about change. Articulating these goals is an important first step toward making your dreams a reality. When your goals are clear, you can use them to get key collaborators on board with your idea, rally staff around your vision, and even inspire patrons and potential volunteers to join you.

When creating a makerspace in your library, think about your goals in terms of three main areas: partnerships, programming, and physical space. Although, in some cases, goals in these areas overlap, it's helpful to consider each area individually to ensure you're giving the appropriate attention to all aspects of your space. For example, it can be very easy to push off reaching out to the local high school to form a partnership with the robotics team when you're busy trying to plan your May programming. But those teens may become volunteers for future programs and help you spread the word in the community. Partnerships, in particular, take time, so constantly keeping those goals front and center will pay off in the long run.

Here are a few examples of partnership, program, and physical space goals set by libraries.

Partnership Goals

- Identify and establish contacts with five new potential partner groups or individuals, including possible in-kind donors.
- Connect with the local school district to identify programming opportunities with their existing makerspace program.

Program Goals

- Identify and develop a team of maker facilitators from existing library staff across other branches to help lead programming.
- Have two staff members trained to operate, maintain, and run classes on 3D printing equipment.

Physical Space Goals

- Work with the administration to formulate a plan for the redesign of the current computer center.
- Establish makerspace storage in the basement area.

These goals all follow a common goal-setting framework called SMART.

S is for *specific*: Goals should be well-defined and easily understood. There's no point in making goals vague or too broad; they can seem overwhelming and unattainable. You can revisit goals over and over again if you need to make changes, but it's better to be specific now and flexible as you move forward.

M is for *measurable*: You must be able to measure the results and know when each goal has been accomplished. This measurement doesn't necessarily need to be through numbers or statistics, but you do need to have a clear way to "check the box" and move on.

A is for *assignable*: Oftentimes, after goals are set, they sit on shelves because there's no one specifically assigned to move them forward. Each goal should have a point person who "owns" that goal, tracks its progress, and calls it to everyone's attention when things need to shift.

R is for *realistic*: Goals should force you to stretch a bit but also fit within the realm of possibilities. For example, you may set a goal to turn an unused storage closet into an audio recording soundbooth in the next month. But if your board needs to approve any changes to the space in your library and they only meet every six months, then the goal as written is achievable but not realistic.

T is for *timely*: Goals must have an associated deadline, otherwise they'll be continually deferred, delayed, or denied—perhaps even all three! Deadlines motivate us, whether we like to admit it or not. They also give a specific reason to check in and reassess your progress.

Applying the SMART framework to your partnership, program, and physical space goals helps add focus, accountability, and timeliness to your process, ensuring you move ahead effectively.

CREATE AN ACTION PLAN

A very large and potentially complex project like developing a makerspace can seem overwhelming, but once specific goals are defined, it's helpful to break down the steps to achieve them into smaller, manageable tasks. The number of tasks needed to complete a goal will correlate to how complex the goal is.

Even if you're not the main decision maker in your organization, articulating an action plan helps you see what part you play in the bigger picture. Seeing your progress as you complete tasks on the plan will feel good and provide the impetus to keep going. Plus, you'll have a record of what you've achieved to share with others.

Key elements of an action plan are:

- Goals you set to achieve
- Description of the tasks needed to achieve each goal
- Who each task is assigned to
- Deadline for each task
- Who might need to approve a task before it's considered complete
- Status indicator if it's completed (or notes on what might prevent its completion)

As you work toward your goals, keep in mind that sometimes things develop in unexpected ways, or something you assumed would happen doesn't materialize. That's when you take a look and make adjustments to the plan so you can keep making progress, without falling apart or abandoning the project. Perseverance and flexibility are central keys to success!

Below are a few tips on using goals and an action plan:

- **Just do it.** Let's face it, not many people like to take the time to write down goals, but it really does help to get the ball rolling.
- **Revisit every quarter.** Set a recurring meeting on the calendar every three months to revisit your goals and to tweak your action plan. You may be surprised by how much you've actually accomplished and will be reminded of things you still want to achieve.
- **Make it public.** Many libraries post their goals and action plan on a bulletin board or in the break room so that everyone can see them. That way, they're always top of mind and not stored in a file on a computer somewhere.
- **Be flexible.** Partnerships fall through, priorities change, and staff come and go. Don't be afraid of revisiting your plan and making changes. Your first action plan is one path to achieving your goals, but it's not the only path.

TOOL

ACTION PLAN

This tool includes a sample action plan and a link to an online template to create your own.

While starting a makerspace program can seem like a daunting amount of work, the rewards for the library and community are well worth the effort. Setting goals and developing an action plan from the beginning will help you stay focused, organized, and motivated. Remember to celebrate your successes along the way, no matter how small. Every task completed is one step closer to a goal met.

Planning and implementing one step at a time gave us the opportunity to effectively bring the makerspace together using the feedback of the community.

BUILD A BUDGET

When people start creating a makerspace, one of the most common questions is: How much will this cost? We began our process by guiding you to listen to your community, take inventory of what you already have, and look at other makerspaces, giving you a better sense of how to create a plan that is realistic and aligns with your library's capacity. Creating a budget that is aligned with your goals is the next important step toward garnering support, soliciting donations, and getting the funds and approvals you need to move forward.

Driving for bigger change? Thinking about remodeling a space? Create a special budget category for facilities improvements. Sit down with your administration and others who manage your building to find out if the improvements you have in mind might fit in with the site improvement plans of your library or local municipality, and if any other departments can foot the bill for the upgrades. Keep track of the one-time expenses for major physical improvements to your facility separately from the ongoing cost of program activities.

If you don't need a piece of equipment or tool for ongoing use, or you just want to try it out, consider borrowing it short-term from another branch or partner institution. Reaching out might also help to open up dialogue about your new program and create new partnership goals.

And if you're considering the purchase of any internet-connected devices or computers, be sure to work with your library IT department before selecting and purchasing, as they may have policies and guidelines you need to follow. Make sure the computers you purchase match the specifications for any maker equipment you have or plan to obtain. You'll also want to coordinate a plan for troubleshooting when any issues occur. If purchasing laptops or tablets capable of running programs and equipment in the space, consider how you can set them up from the start to manage software installs and updates efficiently.

Remember that you don't need to purchase everything for your space. Ask your community for specific donations of supplies and materials, and be firm but kind in saying no to other items, or you may end up spending more time managing donations than running the program. The "Build Support Through Fundraising" portion of the Amplify & Grow chapter offers best practices when asking for in-kind donations and funds to support your various needs.

TOOL

BUDGET PLANNER

This downloadable spreadsheet helps you estimate the cost for items you'll need to purchase and the value of items you hope to obtain through donations.

FURTHER READING

The Makerspace Playbook, although designed for schools, provides useful information for any makerspace, particularly around tools, materials, and safety considerations.

High School Makerspace Tools & Materials outlines an à la carte approach to selecting equipment, tools, and materials for a new makerspace. It covers space requirements, workbenches, storage, and maintenance materials.

STEAM Trunks from Drew Charter School outlines how to create maker carts focused on specific strands of making—from construction to electronics, 3D printing, arts, and crafts.

SELECT AND PLAN ACTIVITIES

Now it's time to get specific about program content. What will people be doing and making in your makerspace? You've heard what kinds of things people enjoy, and you know what kinds of special skills your staff and volunteers possess. You have useful feedback from your prototype tests in regard to how, when, and where to offer your program. Is there a type of activity that you noticed was particularly well received, that participants might want to come back to and build on? What are people still curious to explore?

While this toolkit doesn't provide you with a collection of specific activities, we do know that searching for and selecting projects can be a daunting task, so in the Further Reading section below, we're sharing some of our go-to books and websites for ideas that might be helpful.

As you search for maker projects, keep in mind that you can (and should!) adapt any activity—whether from the internet or a book on your shelf—to inspire community and creativity by being more aligned with a maker mindset. Don't accept activities as they're written! Hack them to create the custom environment you want for your participants.

Think about how to offer an activity in multiple ways. For instance, if you do an in-person program about how to make a craft stick catapult, then also create a video to go along with it to post online. This will reach a wider audience and generate content for your online presence.

And if you remember only one thing, let it be this: Flexibility is key. Being flexible to new ideas before, during, and after your programs, letting go of any preconceived expectations, is the best way to go. Most of the principles highlighted here will happen naturally if you remain flexible and adaptable.

TOOL

MAKER ACTIVITY PLAN

Use this tool to plan and record the materials, instructions, and other details for your maker activities. An example glass etching plan is included.

FURTHER READING

The Tinkering Studio at the Exploratorium features many **innovative projects** that can be used in a variety of settings.

Instructables is a community-driven site that offers a countless variety of projects for different skill levels.

The book series **Invent to Learn: Making, Tinkering, and Engineering in the Classroom**, **The Invent to Learn Guide to Fun**, and **The Invent to Learn Guide to More Fun** provides a wonderful range of activities for the makerspace, all designed to build knowledge, develop skills, and foster a maker mindset.

Madison Public Library provides a **database of kits** with facilitation guides available through their makerspace, The Bubbler, for use during in-house or outreach programs.

The MIT Edgerton Center created a **database of adaptable projects** for K–12 educators organized by "object" or "tool." They also feature tutorials for many of the projects.

Make It @ Your Library from the Illinois State Library provides a curated list of activities to provide inspiration for maker programming.

Little Makers, an IMLS-funded project, created a **toolkit for library educators** on facilitating maker-centered learning for children ages 2 to 6.

CREATE AN ENVIRONMENT FOR MAKING

The environment of a maker experience is an important aspect that you have control over, and it can make or break the success of your programming. The need to thoughtfully create and facilitate a maker activity isn't just for in-person workshops, but rather, it's relevant across the many different makerspace models. The way you influence materials, process, and space can make a difference, whether you're offering a workshop, a self-guided activity, a passive program, a virtual program, or a hands-on opportunity at a community event.

> *I had no idea of the possible impact of a makerspace. It changed how I do crafts. Instead of just handing out some paper, I think, 'What can you do with this paper and these supplies? If I give you minimal instructions, what can you do?'*

In the Welcome Chapter, we introduced the idea of a maker mindset. We now want to talk about how to create an environment to cultivate and support this mindset in your staff and patrons. We were inspired by a framework developed by the Bay Area Discovery Museum called CREATE, which is an acronym for *child-directed, risk-friendly, exploratory, active, time for imagination,* and *exchange of ideas*.

Let's take a closer look at each part of this acronym and how it applies to the development of a maker mindset in patrons of any age.

The C is for *child-directed* but you could easily replace that verbiage with the words ***community-driven***. Your participants need to feel personally invested in the program to be engaged and have a meaningful connection to what they're making. Fully accomplishing this is tough for a lot of people because you have to let go of some control. But we urge you to give it a try because the benefits far outweigh the risks. There are a number of ways you can accomplish this, but here are a few ideas to get you started:

- **Provide choice over materials, tools, and process**. Instead of following an activity in a step-by-step fashion, provide additional tools and materials so there is more than one way to accomplish the project at hand. Or try providing little to no instructions, supplemented with models or examples, to encourage participants to come up with their own creative process.
- **Refrain from immediately answering a question**. One tactic to creating "buy-in" and ownership over a space is to empower participants to discover things for themselves, even if you already know the answer. When a patron asks, "How does this work?" you can reply "What do you think we should try first to figure it out?" or "I'm not sure. Let's find out together."
- **Encourage participants to get guidance from others**. If you observe that one person has mastered a certain skill, encourage others to go to that individual for help and support instead of you. You'll empower that participant and help build community.

- **Try using the phrase "I wonder."** When you see someone struggling, instead of solving the problem for them, try using the phrase "I wonder" to give them a little hint. For example, "I wonder what would happen if you tried to use a different tool to attach that." Some of the most impactful, memorable experiences are those where you face a challenge that you have to overcome on your own.
- **Offer opportunities to share**. Ask participants to share what they've made so they can learn and get new ideas from one another. This sharing might happen physically in your space or might take place digitally on a social media platform.
- **Get feedback from your participants and act on it**. Ask what they liked and what they would like to see next time. Then, try to act on their feedback whenever possible. If participants see their suggestions put into action, they'll be more invested to attend in the future.

The Providence Public Library's Workshop provides flexible space for collaboration.

The R is about making your experience *risk-friendly.* The first step is to make sure that everyone feels safe, both physically and emotionally. How are you helping your patrons feel welcome and have a sense of belonging? Can they see examples of their work and the work of others on display? Are they greeted with a friendly hello when they enter? Are details (e.g., materials, wall decorations, or the music you might have playing) culturally relevant or reflective of the people you serve? Are patrons asked about their interests? Are there places for people to sit comfortably? Do the tools and materials used meet a range of accessibility needs (e.g., left-handed scissors, appropriate table height and seating options, space for assistive devices or personal assistants)? Are your signs and handouts wordy or do they rely on pictures? Are they available in another language?

When people feel like they belong in a space, they're more likely to take a risk and try something new, such as a tool they've never touched before or a technique they've been hesitant to learn. A big part of maker experiences is helping people to discover new passions and build confidence along the way. Makerspaces are where mistakes are encouraged because that's when the real learning happens. Think about ways to share the learnings from each "oops" and to see them as opportunities to problem-solve and build persistence.

Being prepared with ways to modify your activity to make it easier or more challenging as needed is helpful. Why? If an adult enters your space and sees that you're coloring by number that day, they may think it's too easy and leave. On the flipside, if that same person enters and hears you tell everyone that they're going to reproduce Van Gogh's *Starry Night* with no other help or instruction, they may quickly get so frustrated that they give up.

How do you keep people in the room—and coming back for more? You make sure the activities help them stretch their skills, or take just a big enough risk that they feel proud of what they made. Having modifications ready is so important because you may not know what background or skill set your audience has prior to your program.

For example, the Gilroy Library offered a program where tweens and teens made circuits using paper and conductive tape. Staff polled the group at the start to find out who had made circuits before and discovered that most had done it in school, but not all. Thankfully, program staff had prepared for this situation. They had templates available for the beginners, plain paper for those ready to make their own unique design, and a level-up challenge for those needing even more. Since they were prepared, all participants could engage at their own level and feel welcome.

> *We have a brother and sister, 10 and 9, who have high anxiety, to the point that they give up too soon on projects. Through makerspace programming, they've been working, and succeeding, at trying despite fear of failure. They've returned numerous times, each visit more confident.*

Teens show off their paper circuits at Lakeport Library.

The first E stands for *exploratory*. One of the most important ways you can make an activity more exploratory is by designing it to be open-ended, or allowing for many paths. Programming can be open-ended in a number of ways. First, some activities are just naturally open-ended. For instance, hosting a "take-apart" program—where participants bring in old appliances and electronics and take them apart to see how they work—is an open-ended activity. There's no "correct" way to take apart a hair dryer, and even if you gave every single person the same hair dryer to tinker with, they would all probably discover something unique.

Another tactic to make an activity open-ended is by employing prompts and questions. These cues can be used to set the tone for the experience right from the start and can continue throughout. For example, if you had a paper craft workshop planned, you could start by saying, "Today we're going to make pop-up cards." Or instead, you could make the prompt inherently open-ended and say: "Today we're going to explore different ways paper can be folded to make it come to life." In the latter case, participants may not even make a card, and that's okay.

Most activities you host in your space will be somewhere along the spectrum of closed-ended to open-ended. You tend to need close-ended experiences when you're reviewing safety measures for a tool or teaching a new skill, like soldering or crochet. There's a time and place for both.

OPEN-ENDED

There's no "right way" to complete the project or solve the problem, and creations will all look different.

For example, the Corona Public Library hosted an evening program for adults on making sugar scrubs. The library staff member who was leading the workshop started her instructions with some basic chemistry to help everyone learn about the ingredients, why they were chosen, and how they interact. Then everyone made the same basic starter recipe (a closed-ended activity).

Adults at Corona Public Library make sugar scrubs.

After this skill-building exercise, participants were offered a choice of ingredients to create their own custom recipes (making the activity open-ended). By having all participants start out with one simple introduction to ground their understanding of the materials and process, everyone felt comfortable enough to try their hand at doing something new and creative the second time. The library staff made sure there was plenty of time and materials to allow, encourage, and celebrate that exploration.

As you try to modify activities that you find through books, the internet, and elsewhere, ask yourself a few questions to help push your experiences to be more open-ended.

- How can you introduce the activity so participants don't think there's a predetermined final product?
- How can participants have more choice over which tools and materials to use?
- What will you do/say when someone gets stuck or comes up with a different idea that strays from your plan?

The A stands for *active*. Have you ever had to sit in a room where you were being talked at for hours on end? How long were you able to stay focused? To keep people engaged, they need to be actively participating in your program. This is especially important for younger participants. When planning your activities, expect and invite movement, taking into account and accommodating patrons with mobility limitations.

Encourage physical movement by:

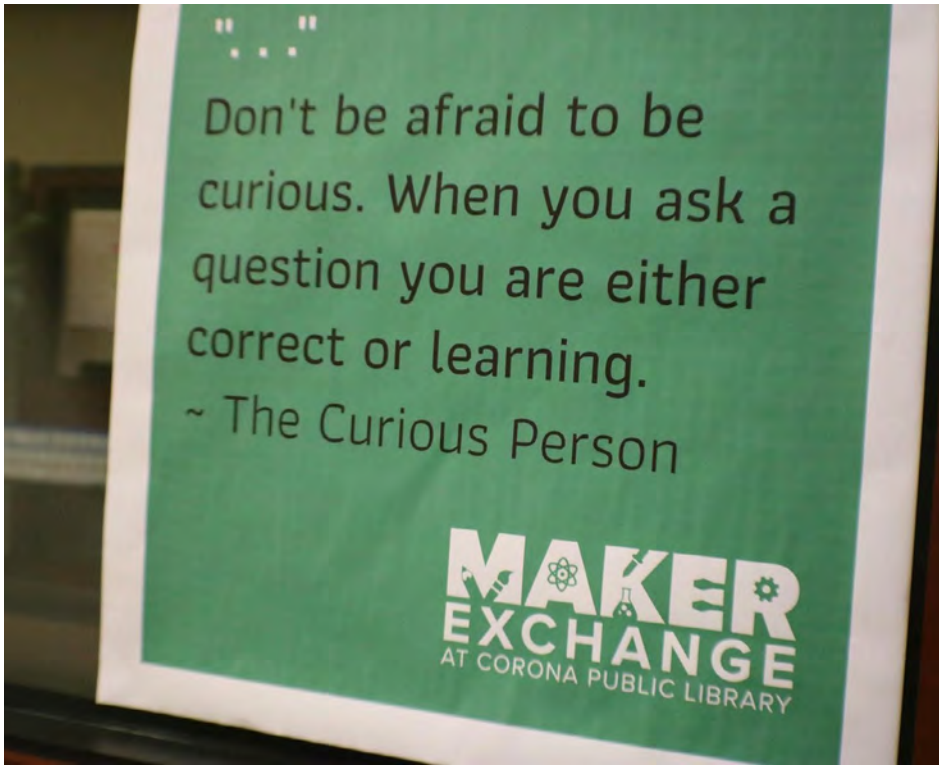
- Have people stand at tables to work instead of sitting, if they are able.
- Provide alternative seating, like exercise balls or bean bag chairs, that allow room to wiggle.
- Stop and take deliberate breaks for a chance to stretch in place or move around.
- Set up the activity with stations so participants need to move from one to the next.
- Play music to encourage people to sway along.

Even minimal movement—such as seated yoga poses or just smiling from having fun—is effective. Physical activity (in whatever form possible) improves oxygen and blood flow to the brain and helps people not only stay engaged but enjoy their time more at your program.

The T stands for *time for imagination*. Imagination is at the heart of creativity and a vital component of any makerspace. Remember to provide space and time for imagination to flourish. Sometimes new ideas come at unexpected moments.

Try being explicit and literally tell participants that you would like them to use their imaginations and be creative. Many times, just the verbal permission to do so gets the juices flowing. Think about including encouraging posters as the backdrop of your videos or on your walls, leaving a note inside your program box, or placing a sign on your program tables with messages like "Stretch your imagination!" and "Wondering encouraged!"

Padding in ample time is also important, as is listening to participants. At community events, for instance, plan for some people to spend more time lingering while others finish more quickly. In a virtual program, suggest participants pause the video while they take time to tinker. In your library, consider having space on a bulletin board or even just paper slips near a jar to collect ideas for future activities and programs. All of these things will help establish a vibrant environment for creativity and imagination to thrive.



Inspiring signs are posted around the Maker Exchange at Corona Public Library.

The final E stands for *exchange of ideas*. Creative collaboration and building off of each other's ideas are hallmarks of the Maker Movement. And it becomes especially important for activities with tweens and teens, who've often been taught to think that looking at someone else's work is "cheating."

If someone is struggling, try redirecting them to find inspiration from another patron (e.g., "I think Jose figured that out. Why don't you talk to him?" or "Tamara tried a really unique design. You should go check it out. It might give you some new ideas.")

Finding opportunities for patrons to talk with and get ideas from one another, whether in person or online, will not only build community and push new ideas, but it also takes the pressure off of you to always have the answers. You may even discover some new instructors for future programming!

During a self-directed fiber arts-themed program at Anaheim Public Library, a staff member was unsure how to thread the new sewing machine, and kids who had taken a sewing class before demonstrated how to do it. Several moms also ended up teaching kids how to embroider, a skill they had learned many years ago and had almost forgotten about until they visited the makerspace. All the library had to do was set the stage for these interactions and provide time and space for connection and collaboration.

You can also set the stage for collaboration by how you physically arrange the furniture in your space. Changing your space doesn't have to require massive amounts of money and can even be done in multi-use makerspaces. Did you know that a "shower board" from your local hardware store is a cheap substitute for a whiteboard that provides a great place to collaborate on ideas? What would happen if you installed casters on some of your furniture to add more mobility so you can rearrange the space more easily? Do you have a closet to store a few floor cushions to bring out to encourage hanging out together, conversing, and sharing thoughts and ideas? Take a moment to think about the physical arrangement of your program and how it can encourage an exchange of ideas.

Children are welcome to play together and interact on the colorful floor mats during Maker Monday at Kings County Library.

Given the space and opportunity, maker program participants can teach one another, which is encouraged at Ponderosa Library.

FURTHER READING

The CREATE Framework: Learning Environments to Develop Creativity outlines how educators can build children's creative problem-solving skills through intentional experiences across a range of learning experiences, from designing exhibits to classroom setup and curriculum development.

Make Space: How to Set the Stage for Creative Collaboration is a practical guide that shows how space can be strategically set up to ignite creativity.

The Space: A Guide for Educators helps the reader explore creative ways to improve your space to support learning, even if you're on a tight budget.

It's not just about what we learn, but also how we learn it. It's important for us as facilitators to recognize that there are different ways and approaches to learning, so that we can be more adaptable and flexible when it comes to planning and facilitating our programs.

ENVISION THE PATRON EXPERIENCE

Creating a hypothetical patron experience is a great technique to help you fully envision your entire program experience and ensure that you thought through every aspect. Start by imagining your patron's experience from the moment they learn about the program to the moment they leave after the program or event is over. You may want to do this activity with your team and sketch things out on a whiteboard or on a large sheet of paper. Ask yourself:

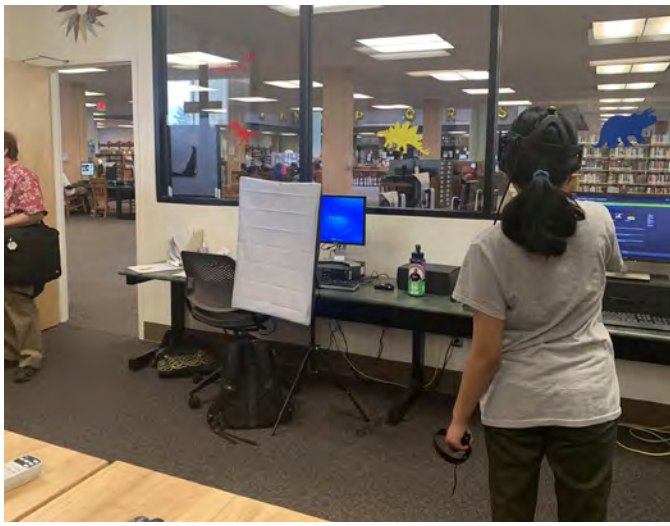
- How do participants find out about the program? Do they need to preregister?
- Is the program visible and/or easy to find? How are they greeted when they arrive?
- How do participants get started? How are they invited to make?
- What does the space look like when they arrive? What is displayed on the walls?
- How is the furniture arranged? Can participants move about while doing the activity?
- How will the tools and materials be arranged or distributed for participants to find, access, and use? Are they adapted for varied skill levels, ages, or special needs?
- Will participants be encouraged to work collaboratively or individually?
- What happens if participants finish early or need more of a challenge?
- How many staff members are available to interact with?
- Are there ways to extend the learning afterwards (e.g., books in the collection or virtual resources)?
- Will participants be asked for their feedback at the end?

After you run your program, reflect on what parts of the experience went well and which did not. You may need to regroup the team and conduct this exercise again focusing on the aspects that need improvement.

At Kings County Library's Maker Mondays, the entire participant experience is considered, from the signage outside to the variety of activities offered.

Kings County Library hosts a Maker Monday event one evening a month, geared toward families. When families arrive at the library, they see a special sandwich-board sign outside on the sidewalk advertising that the event is taking place. Upon entering, a family might first encounter either the circulation desk, where they're greeted with a welcome and suggestion to visit the Maker Monday area, or they may go straight to the first Maker Monday activity table, where a staff member is stationed. That staff member explains what the featured activities are this month and encourages them to visit each table or try the VR experience.

Strategically, there are some activities set down on a colorful mat for young children to enjoy, while older siblings can try out the hands-on science and art activities, including a tech demo. Before participants leave, there's at least one opportunity for them to give feedback on a paper survey. Everyone is encouraged to attend other maker-themed events that are coming soon on the calendar.



The glass walls at JFK Library's makerspace serve as an open invitation to passersby.

The Makery, a dedicated makerspace at the JFK Library, is located at a distance from the library main entrance, so there are flyers posted near the entrance with the latest activities offered, to guide patrons. The makerspace room is enclosed with two walls of glass, so it's easy to see inside, and the VR equipment and 3D printers are strategically placed up against those windows, to draw the attention and interest of passersby.

When patrons arrive, they're greeted at the door with a friendly hello by The Makery staff, given a quick run-through of the space and the creative tools offered, and are informed that the space is open to the public, age 13 and up. If a younger person arrives, they explain that they can enter with an adult or return at a future time dedicated to young makers. Before getting started with any tools or activities, patrons sign a liability waiver, which is kept on file in the space. During open hours, the activities are largely self-directed, but staff is on hand to provide assistance. There are also times when patrons can come back for more structured workshops.

Part 2: Launch

STAFFING

As we mentioned at the beginning of this toolkit, people are the heart and soul of a makerspace. And staffing can be a difficult challenge in any makerspace, regardless of where it's located. Without adequate staffing, it's very difficult to offer the programs that you know your community needs and wants.

Naturally, we'd all like to know exactly how much people-power time is needed to run a maker program. The challenge is that every program and space is unique, so there's no "one size fits all" answer to the question. The actual job descriptions and number of hours dedicated to the maker program will vary depending on many factors, including but not limited to the implementation model you're launching, the frequency of your programs, and the complexity of the activities.

Always keep in mind that outside of the time required to run a program, makerspace staff also need time to plan for activities, order supplies, maintain equipment, train, and arrange for program facilitation and support.

That being said, when we asked libraries what key qualities are most important for makerspace staff, they all unanimously said: *open-mindedness, curiosity, and flexibility*.

Other key characteristics they mentioned are:

- Community builder, able to connect with the target audience
- Collaborator with people-management skills
- Organized with project-management skills
- Proactive, go-getter, independent thinker
- Comfortable with social media and online engagement
- Determined, doesn't give up or get discouraged easily
- Experienced in teaching and/or classroom management skills

It's important to note that these characteristics apply to staff from a wide variety of backgrounds. Although it'll be nearly impossible (and not necessary) to find one person who possesses all of these qualities—in addition to any specific software or technology background that your space may require—this list provides an array of general traits to keep an eye out for and include in your interviews or recruitment language. Having a team of staff and volunteers that reflects these traits will contribute to a strong and sustainable outcome. Need some examples? We have a **collection of job descriptions** from various libraries to help.

Look Within

Based on the need to have staff facilitate the open hours, we've changed a staff member's shifts and job duty focus. He's shown an amazing change in his work attitude. He's excited to be here and share his knowledge. His supervisor has found his area of expertise and it's been a joy to watch him blossom.

The best place to start looking is within the walls of your own library. Do you already know who on your staff and volunteer list is a maker at heart? Have you determined which people in your library naturally have a maker mindset? You may not realize that your circulation desk staff member is an amateur ham radio enthusiast, your library page is an expert at macramé, and your retired volunteer was a former game designer. Start there and find out what hidden talents your staff and volunteers have because chances are they would be more than happy to share their passion with your community. Everyone can play at least a small part in shaping your maker program!

When **Blanchard Community Library** started planning their makerspace, the library staff wanted to find a community member with experience in digital media to help. It turns out that a volunteer at one of their partner organizations, the local art museum, was a retired Disney animator, highly skilled in 3D modeling. They reached out and not only did she want to help with the program, but she ended up getting a part-time job at the library and has been an integral part of the maker team ever since.

At **JFK Library**, they discovered that one of their part-time employees at the circulation desk had a degree in filmmaking. After uncovering that expertise, they decided to shift his duties to running the makerspace open hours and helping to set up their video-editing workshops. He loves his new job and has brought his skills and passion to the position.

Ask for Help

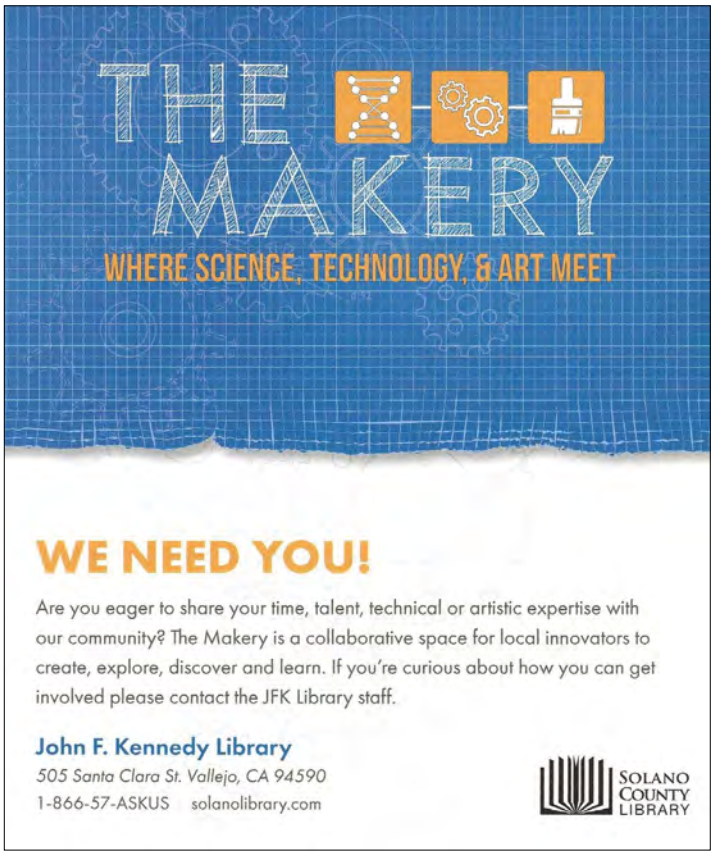
Most makerspaces rely on volunteer help. Prior to advertising for and recruiting volunteers, confirm with your administration about the processes around bringing on volunteers, as well as the limits of volunteers, and consider the impact on paid staffing models. Clearly define what volunteers are able to do to help and what staff are required to do. Do you need assistance on a regular ongoing basis, or is it a short-term project? Are background checks required before final approval?

The coding workshop for kids at Blanchard Community Library, led by a retired professional animator, is very well received.

What skills do you require most? Chances are that you need to recruit a bit differently for the makerspace than you do for your volunteers who help with tasks like shelving books. Think about looking to local industries and businesses that align with any special skill sets you might find helpful.

To encourage people to lend a hand, consider how you might incentivize your volunteer program. Is there any benefit a makerspace volunteer gains by helping out? Would they get access to any of the equipment during off hours in exchange for coaching others or leading workshops? Be creative as you build your maker volunteer program and develop ways to show gratitude and appreciation to all your volunteers.

And remember that young people can be some of the best volunteers. Since schools are incorporating more coding and STEM education into the classroom, there are more kids who have experience with the tech and tools that are in a makerspace. Some of these kids really geek out over it! Why not invite them to share their passion for tech with others in a youth volunteer program? They might serve to help peers, or work in an intergenerational program to teach tech to seniors. Don't underestimate your teens!



This flyer soliciting help for JFK Library's makerspace is simple yet effective.

> *Everyone on the staff is interested in different things and good at different things, which they're generous to invest their time and resources in. They've also been open about coming back again, sharing their craft, and showing willingness to help future maker events.*

Youth Community Service

Many secondary schools require youth to volunteer in some form of community service. If that's true in your town, plan for simple straightforward tasks that young people can do to help out with the maker program—from prep to publicity. Have you noticed that a few of your teen program regulars have advanced skills with making? Invite them to share their talent in a youth-led maker activity. It's important to provide some coaching and encouragement, balanced with lots of room for youth to express themselves. Many libraries value the input of their teen advisory boards to help guide the direction of their programs.

Hopefully, through community service programs, your library will kindle new and fruitful relationships with creative and energetic young people in your area. You may notice youth who are interested in sticking around and getting more involved (though you may need to outwardly encourage this idea). Consider recruiting some of these youth as helpers for your virtual programming, busiest events, and summer programs.

Summer help from teens is essential at the Corona Public Library Maker Exchange.

Internship Programs

Interns from high school, community college, or university can bring advanced skills and dedicated staff support to your program. Hosting an intern is a commitment to mentoring an individual in exchange for some valuable help, so be sure you have the time and capacity to invest in anyone you recruit. Consider what kinds of skills they're hoping to develop, and how they align with the goals of your maker program. You might have someone looking to gain general work skills—like customer service, marketing, or project management—or someone wanting practical experience in applied technology. Others might be seeking teaching experience or professional experience in library science.

Many internships are paid, but often the library isn't responsible for funding them. Depending on the source, the intern might get paid through a workforce development program or through a school work-study program. Through a grant from the University of Wyoming and the Wyoming Department of Workforce Services Division of Vocational Rehabilitation, the Natrona County Library sought applicants from the Pre-Employment Transition Services program. In addition to learning the makerspace equipment, the two student hires worked alongside their supervisor and their job coaches to develop soft skills for future employment. When the grant cycle ended, the Natrona County Library was able to hire the students as library staff to continue working in the space.

Feldheym Library approached the city and recruited an intern through a local economic development initiative, while the Atascadero library regularly hosts an intern from the community college's library information science program. Internship programs are a great way to get passionate, eager-to-learn individuals on board, put their talent to work, and provide a benefit to both parties involved.

Contract with Local Makers

If your budget allows, you may even want to pay someone (e.g., a local artist, repair specialist, scientist, or bike mechanic) to teach a class or a series of classes. In some cases, libraries hire these individuals as a "maker-in-residence" for an extended period of time, to infuse the programming with rich content and new people.

Many individuals in your community who "make" for a living have great skills to share. Showcasing their skills through hands-on learning is a prime opportunity to model careers and invest in the local maker ecosystem. As a bonus, this programming may attract new audiences to your space, who in turn may become volunteers in the future.

TRAIN FOR SUSTAINABILITY

Staff training can be a challenge, especially when you have to plan for staff turnover. Along with creating training videos and tutorials, keep written guides, resources, and procedures for equipment and the space in a centralized location so staff can easily access and reference it. One of the big lessons learned from established library makerspaces is the need to integrate training across staff from many departments and programs. Thinking you can hire just one individual to run "all things maker" is a staffing model that will get you into trouble fast.

There are many ways to "spread the love" across your library. And not everyone, of course, will be knowledgeable in all aspects of your space, but the more you can cross-train staff, the better. You want your makerspace to be seen as one of the core services you offer at the library.

Invite all of your staff, administrators, interns, and volunteers to become at least generally familiar with the tools and materials available in the makerspace. Even if you don't plan to schedule these folks to facilitate the program, they'll be able to refer people to the resources available if they're familiar with what the makerspace has to offer. You might find that some will be excited, but others might be nervous or hesitant to participate.

Here are some common statements you might hear, along with suggestions for how to respond.

"This will take too much time to learn."	Emphasize the need to simply play around and just try out the tools and materials. They might surprise themselves by something they find really fun or interesting.
"I'll never be able to learn enough to answer the questions patrons would have."	Let them know that they don't need to be the expert and can respond with "I'll find out" or "I don't know, but we can try and find out together."
"I'm just going to break that thing."	Ease their worry and let them know it's highly unlikely that they'll break something. Even if they do push the wrong button or make a rookie mistake, things can be fixed (and often in the fixing, the learning gets even deeper).
"This isn't why I became a librarian."	Find common ground on why they entered the library field in the first place. If it's a love of lifelong learning, makerspaces are exactly the place for both staff and the community to learn, grow, and try something for the first time.

Skokie Public Library keeps handy binders with equipment guides in the makerspace.

Once you get through some of the initial hurdles, here are a few ways to invite individuals across departments to get involved:

- **Encourage exploration**. Build time into work schedules for staff to experiment with the 3D printer pen or to try out the VR headset. People will gravitate toward things they're naturally interested in and curious about, and they may be inspired to dive deep and gain expertise that could really help you in the long term.

If you're not learning or being stimulated, it's so easy to become stagnant. To keep things interesting and keep staff motivated, you need to provide new learning opportunities, as well as space for staff to express themselves creatively.

- **Lend tools to take home**. If it's okay with your administration, allow people to take something (e.g., robotics toys or the Silhouette cutting machine) home with them. This allows staff to become familiar with new tools without the pressure of being "watched" at work.
- **Host a maker "petting zoo."** Ask for time in an upcoming staff meeting or training day to set up a maker petting zoo. Have all of the equipment, tools, materials, and software out, and just allow everyone to explore or offer a sample program. Kings County Library held an event like this and introduced their new tools at a systemwide all-staff meeting.
- **Create a training video playlist**. Most makers are self-taught and became "experts" on a particular tool by watching hours of how-to videos on YouTube. Don't feel that you have to create a massive training plan to get everyone up to speed. Create a playlist of training videos to get people started, record any training you do, and encourage others to share great videos they've seen to add to your collection.
- **Offer skill builders**. For those who will be more directly involved in the makerspace, schedule some specific training for each type of tool or technology. We recommend starting with a two-hour training that provides the basics of how the tool works, plus some troubleshooting tips. Follow this with a specific project to hone their skills.

FURTHER READING

Check out rich conversation and reflections about training and staffing from several library representatives and get practical tips for success on the "**Understanding the Post-Emergent Phase of a Makerspace**" webcast, and browse case studies and reports posted on YouMedia's **Post-Emergent Library Makerspaces**. These two resources come from interviews and articles with some of the libraries who first created library makerspaces here in the U.S.

OPERATIONS

Aside from the people needed to run your space, there are a lot of logistics to consider around the general operations of a makerspace to ensure it runs safely and efficiently. Like staffing, many factors are dependent on the unique characteristics of your space and the type of programming you're offering. We've pulled together a list of things to consider, gleaned from discussions with many library makerspace teams.

Design for Health, Safety, and Accessibility

When you design the space and select tools, materials, and activities, there are important factors to ensure that the facility and the people inside it can use the space safely and effectively. This encompasses everything from how equipment in the space is set up to signage and training, and there is absolutely nothing more important. Safety first, always. Here are a variety of considerations.

Safety Guidelines: Based on your programming, think about safety guidelines necessary for both staff and patrons. Do you need to have any safety rules posted (e.g., safety glasses must be worn)? Can patrons operate a tool themselves (for example, on a cart in the library), or does a staff member need to assist? Is there a safety manual easily accessible for staff? Are the first aid kit and fire extinguisher accessible and clearly marked?

Accessibility: As you consider layout and furniture options, keep in mind the wide range of patrons who may utilize your space. Toddlers, teens, and seniors may all utilize the space in a single day. Look into tables that can be raised or lowered easily to accommodate wheelchair users and chairs that can slide instead of roll for those with stability issues. Ensure that the area is kept free of clutter that may inhibit mobility or be a trip hazard.

Training and Orientation: Employee and volunteer training are essential for creating a safe space, providing guidance and procedures for both smooth operation as well as when things go wrong. A solid orientation, regular "refresher" courses, and plenty of clear signage lay the foundation for a safe environment. Consider what specific training might be needed before any staff or volunteers use a tool or operate a machine.

Electrical Supply: Before you purchase electric-powered tools, check on your library's capacity to run these machines. Collaborate with facilities staff and electricians to see if you have ample infrastructure to handle the load. If you have to increase your capacity to add digital fabrication tools, for example, you may be encumbered by significant cost.

Ventilation: Many tools and materials can off-gas or smoke, negatively impacting the air quality in your space. Paints, solvents, certain types of 3D printer filament, soldering, and laser cutting all have the potential to emit harmful particles or vapors. Carefully read all warnings on the tools and materials you choose for your programs. Work with

your facilities department to maximize fresh air flow and filtration of the air in the space. Purchase equipment options that help keep the air filtered and/or vented outside, such as air filter systems for laser engravers. Running programs outdoors or having a window that you can open is also helpful.

Egress Routes: In the event of an emergency, staff and patrons need clear and marked egress routes to exit the space. Prior to opening, confirm with your fire marshal about the number of egress routes required for the square footage of the area and ensure that the egress routes have been added to all emergency manuals.

Accident Prevention: There are many factors to consider to prevent accidents before they happen. When setting up centers for activity, consider how people will move within the space. Prevent accidents by eliminating trip hazards, and avoid having groups of people near equipment that could harm them if they got accidentally bumped. Are electrical tools unplugged when not in use? Are sharp instruments kept tucked away safely until needed? Even sewing needles, scissors, and hot glue guns could cause harm, so be mindful of precautions to take with all of your activities, whether low tech or high tech.

Protective Gear: Keep an adequate supply of protective gear—such as safety goggles, gloves, first aid supplies, masks, and smocks—on hand, considering what you plan to do in your maker program.

Cleanliness: Provide protocols and supplies for cleaning and sanitizing materials and equipment between users. And make sure to budget for any specific cleaning agents that are needed to maintain your tools and equipment.

Patron Training and Waivers

Are you offering any equipment that would require patrons to sign a liability waiver or obtain some sort of training before using? One could argue that knitting needles, hot glue guns, and scissors pose a safety risk, let alone laser cutters and soldering irons. You'll need to consult with your own administration and legal team to determine the specific needs at your site.

- At JFK Library, patrons are provided a tour of The Makery and invited to fill out an information form and sign a release form. These forms are kept on file in the space, and the staff make sure participants are registered before using the space or participating in a program.
- Los Angeles Public Library's Octavia Lab requires patrons become an **Octavia Lab Member** before using any equipment.
- The Harris County Public Library offers **mandatory orientation sessions** for certain pieces of equipment prior to patrons signing up to use them.

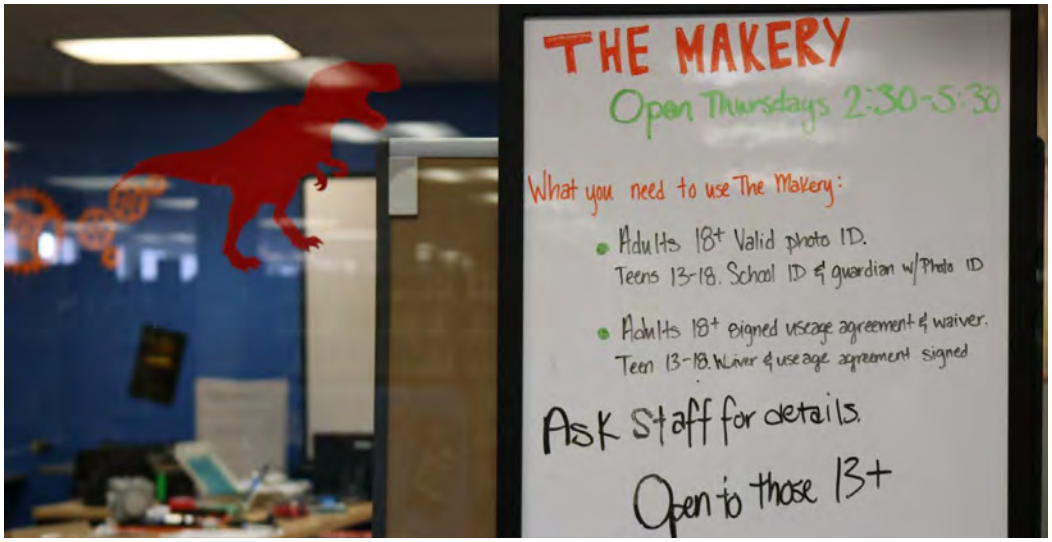
- SparkPlace at Greene County Public Library has a **Makerspace Use Agreement and Release of Liability form** that has sections for both adults and minors.
- If you host a large community event, sometimes the liability waiver is connected to your registration form. You might consider this to make the event day less complicated.

If you need some inspiration, look to these **example waiver forms** collected from our libraries.

Age Restrictions

Does any of your equipment (e.g., VR headsets) have age restrictions from the manufacturer? Remember to check with your administration on whether you need to get a parent or guardian to sign a waiver for a minor to participate in your program or use a piece of equipment. At JFK Library, The Makery restricts the open studio participants to age 13 and up, with some exceptions if accompanied by an adult. And at Feldheym Library, only patrons age 13 and up can use the VR system, and all participants sign a waiver in their gaming program.

You may also choose to implement an age restriction because you want to preserve certain programs or spaces for certain patrons (e.g., a teens-only space). Teens, in particular, tend to thrive when they can be together with other teens but often aren't interested in attending if the program includes younger children and tweens. Some libraries keep their teen program restricted to teens only and support the program with a teen advisory committee. When Corona Public Library launched their maker program for teens, parents clamoured for additional STEAM programs for elementary and tweens. They experimented with a variety of program times, figured out the right times for teen-only programs, and then added something for younger children at a different time.

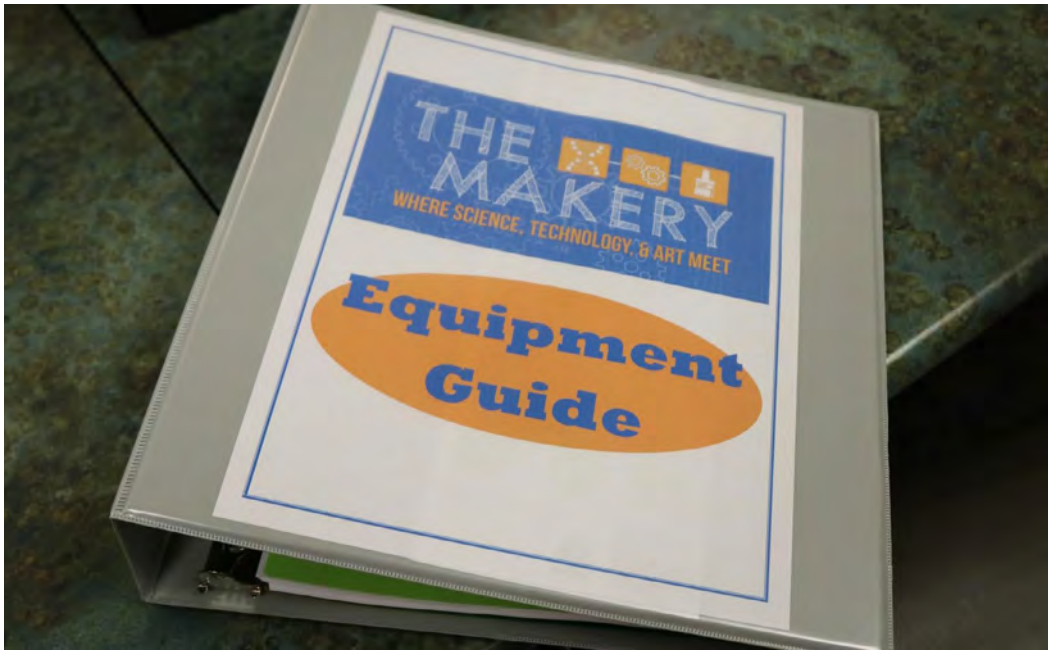


The Makery has age restrictions, along with ID and waiver requirements, posted at the entrance.

Maintenance

Creating a maintenance schedule is crucial for any tool or piece of equipment that you want to keep working optimally. It's also something that can easily slip through the cracks, so it's best to assign one person to be in charge of making sure it happens. Here are a few additional tips:

- When you purchase new equipment—such as a laser cutter, CNC mill, or 3D printer—find out about the optional maintenance plan. This could provide additional technical support, which might not be available otherwise in your town.
- Keep the warranty information, serial numbers, and equipment manuals in an easy-to-find place. When something goes wrong, be sure to check your warranty and be persistent! When the new laser cutter wasn't functioning at Gilroy Library, the manufacturer kept insisting it was user error. But after much persistence, they agreed that there was a problem with the machine and finally replaced it.
- Keep track of dates for when things such as filters are replaced. This data can help when there are new staff/volunteers and with ordering supplies too.
- Wondering how to maintain a particular piece of equipment? Ask your community for help! The Lakeport Library's solution was to hold a program on sewing machine maintenance. Not only did the patrons learn more, but the staff got good information too and built a stronger relationship with a local expert on sewing machine repair.



The Makery keeps their equipment instructions and maintenance manuals in a handy binder in the makerspace.

Digital Fabrication Policies and Procedures

If you're choosing to go the high-tech route for your makerspace, you'll need additional policies and procedures related to the production of your patrons' digital creations. Whether it's a digital design destined for the 3D printer, or a vector graphic file destined for the vinyl cutter, laser cutter, or CNC mill, you'll need to decide a few things.

- How many files can patrons send for production? How often?
- Are there restrictions on the size of the project or the time it'll take to use the equipment?
- How will the file transfer take place? Will patrons upload the file to an online queue system? Or give it to you on a flashdrive?
- Sometimes the design files can have format or quality problems that must be addressed before sending to be cut or printed. Who will handle that?
- Will you restrict the use of copyrighted imagery?
- Will you allow individuals to sell or make a profit on things they create in your space? Do they need to recognize the library?
- Do patrons need to provide their own consumable material or pay a fee to the library for materials like filament, wood, vinyl, or fancy paper?

An example of consumables available for purchase at the Erie Community Library's CLUB makerspace.

This last question is a big one for sustainability. Consumables can take a toll on a makerspace's budget. Some spaces provide material for use at cost to offset this. Pricing considerations vary by equipment and material type. For instance, Exploration Commons at 50 East has a public **materials price list** available and accepts donated materials. Additionally, the **pricing for 3D printing** is based on print duration and weight of the object. At **The Studio at Anythink Wright Farms**, materials are provided free of charge during library programs, unless otherwise specified. For personal projects, they ask that patrons bring their own materials or may charge a fee.

The Erie Club (Create, Learn, Understand, Build) Makerspace at Erie Community Library also charges for expenses related to some of their equipment-related consumables.

While a small supply of materials are available for purchase, patrons usually bring their own supplies for their projects. However, the use of equipment in the makerspace is always free of charge.

Storage

Makerspaces, regardless of what form they take, always have lots of stuff—tools, materials, manuals, safety equipment, and more—and it just goes with the territory. Having a good system to store things and access them when and where you need them is important. Where will you put all of the tools and materials when not in use? Can some be left out for patrons to use whenever they need? Does any of it need to be locked? Will participants be able to leave behind a project-in-process? Consider cabinets or carts that have wheels in case you need to move them from one location to another. Also think about how you'll label bins and shelves to keep things in order.

The Atascadero Library maker program shares cabinet space with the children's librarian and uses a small staff kitchenette area for consumable materials. The Maker Box program in Tulare County is managed by the lone librarian of the tiny rural Pixley Library. Since they don't have storage space at this branch, kits are stored and restocked at the central library.

Rolling carts can be very useful for storage. Kings County Library outfitted a locking, rolling storage cart for each of its branches and filled them with a starter assortment of maker tools and materials. The library plans to share program tips and activity ideas so each of the branches can incorporate creative making into their programs. On the following pages are a few examples of maker carts.

Having clearly labeled, organized, and inventoried storage has been a huge time and money saver. When everything has a place, we don't end up purchasing duplicate supplies or waste time looking for tools.

This affordable rolling cart for consumable supplies at the Feldheym Library also holds a paper-sorting system and pen holder on top. Participants can easily access supplies organized in the many pull-out drawers.

Kings County Library invested in a dedicated cart that is specifically designed for the 3D printer, allowing them to keep all the supplies in one place, move to different program rooms and demonstration locations, and store when not in use.

This rolling tool cart, used by Blanchard Community Library and Kings County Library, is handy because it has locking doors and drawers for any items that you need to keep secure, as well as a butcher block work surface on top. You can find carts like this in tool storage sections of hardware retailers.

If you don't have funds for a new cart, consider repurposing one of your book carts. This one uses simple, inexpensive bins and containers (even a cardboard box!) to organize supplies. Space and flexibility are maximized by hooking a two-compartment plastic tote over the handle.

This cart is like a cabinet and counter-height table on wheels, and it offers many useful features like electrical outlets, a trash can compartment, and a system for storing stools for seating.

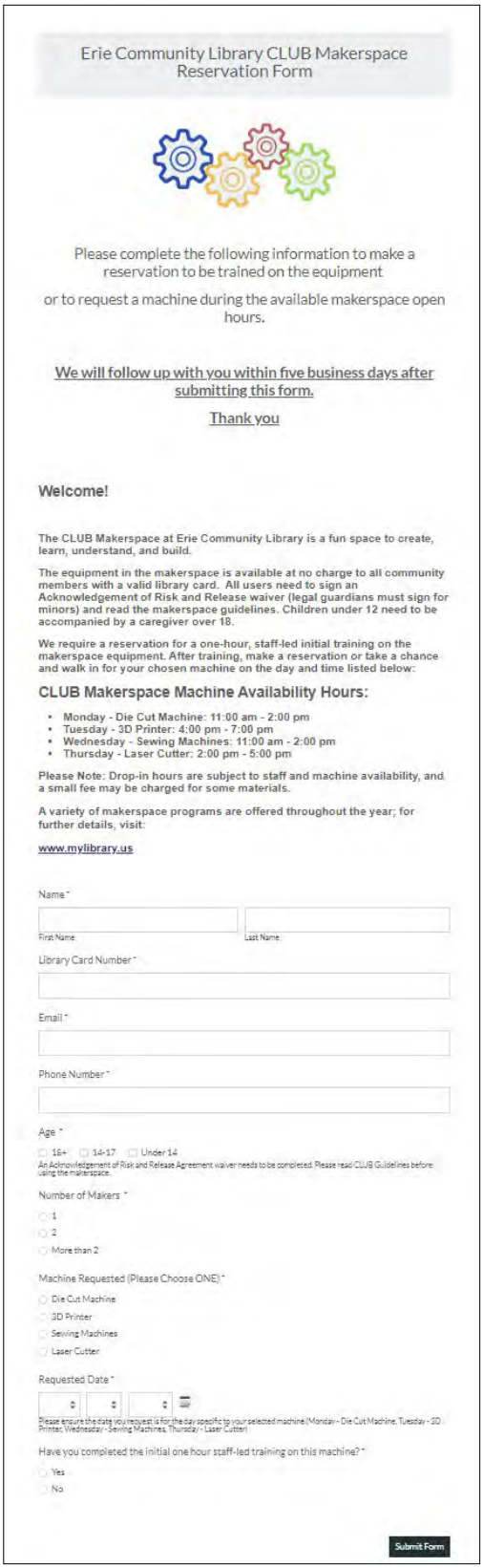
An orderly, well-labeled storage system for supplies and equipment like these shelves at Erie Community Library make the work of materials inventory and preparation less stressful for staff.

Some materials, like 3D printer filament in this photo from Natrona County Library, are best stored in airtight containers.

Hours of Operation

How often will your program run and what hours will your space be open? This may be something that you limit at the beginning and grow over time since it's highly dependent on staff availability.

- Blanchard Community Library started by integrating their maker program into their weekly teen program but then discovered the demand and interest of teens allowed them to expand it to twice per week.
- Libraries with dedicated spaces, such as JFK Library and Corona Public Library, both started out with "soft openings" and limited hours, giving staff a chance to get trained, as well as build interest and awareness of the program, before expanding to daily hours.
- The Feldheym Library discovered that the library's 6 p.m. closing time made it very difficult to attract adults and families to the library for maker programs. They advocated to expand hours one night per week, and now Tuesdays are a very active program night not just for the makerspace, but for all areas of the library.



Erie Community Library CLUB Makerspace Reservation Form

Please complete the following information to make a reservation to be trained on the equipment

or to request a machine during the available makerspace open hours.

We will follow up with you within five business days after submitting this form.

Thank you

Welcome!

The CLUB Makerspace at Erie Community Library is a fun space to create, learn, understand, and build.

The equipment in the makerspace is available at no charge to all community members with a valid library card. All users need to sign an Acknowledgement of Risk and Release waiver (legal guardians must sign for minors) and read the makerspace guidelines. Children under 12 need to be accompanied by a caregiver over 18.

We require a reservation for a one-hour, staff-led initial training on the makerspace equipment. After training, make a reservation or take a chance and walk in for your chosen machine on the day and time listed below:

CLUB Makerspace Machine Availability Hours:

- Monday - Die Cut Machine: 11:00 am - 2:00 pm
- Tuesday - 3D Printer: 4:00 pm - 7:00 pm
- Wednesday - Sewing Machines: 11:00 am - 2:00 pm
- Thursday - Laser Cutter: 2:00 pm - 5:00 pm

Please Note: Drop-in hours are subject to staff and machine availability, and a small fee may be charged for some materials.

A variety of makerspace programs are offered throughout the year; for further details, visit:

www.mylibrary.us

Name *

First Name Last Name

Library Card Number *

Email *

Phone Number *

Age *

18+ 14-17 Under 14

An Acknowledgement of Risk and Release Agreement waiver needs to be completed. Please read CLUB Guidelines before using the makerspace.

Number of Makers *

1

2

More than 2

Machine Requested (Please Choose ONE) *

Die Cut Machine

3D Printer

Sewing Machines

Laser Cutter

Requested Date *

Please ensure the date you request is for the day specific to your selected machine (Monday - Die Cut Machine, Tuesday - 3D Printer, Wednesday - Sewing Machines, Thursday - Laser Cutter)

Have you completed the initial one hour staff-led training on this machine? *

Yes

No

Submit Form

Reservation System

Depending on the type of implementation model you're using, you may need to have a reservation system in place, whether it's for patrons to register for a program, to check out materials, or to use a particular tool or material within the library. Many libraries already have a digital event-reservation program, but if not, there are options available, from a simple clipboard sign-up sheet to an event-management software system.

Reservation systems can be helpful if you:

- Have limited space (e.g., maximum capacity for a physical room or an online event)
- Have limited materials, tools, and supplies
- Need to work within limitations of staff schedules
- Want a certain staff-to-participant ratio to ensure things run smoothly and safely

A reservation system for equipment or an entire space can be advantageous for makerspaces just starting out. By implementing

such a system, staff can have control over scheduling and use of equipment, and they can prepare ahead of time for any issues that might come up with a piece of equipment that has been booked. Reservation policies can take into consideration the number of hours a machine can be booked and how often it's available each week.

To access the makerspace at Erie Community Library, patrons have two options: they can either make a reservation in advance or try their luck with a drop-in visit. To reserve a spot in advance, patrons fill out the reservation form found on the library's website, where they can book time for a project or request training on a specific machine. The Belmont Library branch allows for **booking the entire space** while San Diego Public Library has **reservations by equipment**.

Like most libraries during the pandemic, programming at the San Diego Public Library's IDEA Lab (in the Central Library) shifted from in-person to virtual. The IDEA Lab offered synchronous Zoom workshops paired with pre-packaged supplies (a maker kit) for attendees to pick up prior to the event. During the Zoom session, attendees followed along with staff to make a project with the maker kit. Registration for these events was required for planning purposes.

For any in-person or virtual program you implement, it's important to keep track of the number of people that registered compared to how many attended. For example, If you regularly get only 60–70% attendance compared to reservations, you could plan to overbook the event and still be able to accommodate the group. Another helpful hint is to collect phone numbers and/or email addresses when people sign up and give them a call or email the day before the program as a reminder. Making these connections is a great task for a volunteer.

FURTHER READING

When developing policies, rules, and procedures, it helps to look at models from other libraries. Here are just a few examples and resources to get you started:

- American Library Association's resources for **developing a 3D printer policy** and **guidance regarding policy for digital media labs**
- Marin City Library's **3D printing policy and guidelines plan**
- Sacramento Public Library's **3D printing policy**
- **Makerspace Waiver of Liability** and **Code of Conduct Agreement form** from the Makerspace Media Studio at the South Novato Library
- **Participant release form for adults** and the **form for minors** from Woodland Public Library's Square One makerspace
- **Online permission form** for San Francisco Public Library's teen space, The Mix
- **Certification required** by the Fayetteville Free Library to use designated tools
- Maker Ed's **makerspace safety resources** to plan training, operations, and draft rules for the makerspace
- St. George Library's **set of YouTube videos** to help with safety certification training
- Santa Clara University's Makerlab **tool safety videos**
- Pikes Peak Library District's **Creative Space Use Policy**
- Dearborn Library's **SparkLab policies** (at end of the page, including a video on safety)
- The University of Alabama's **MultiMaker Lab policies by equipment**
- Infopeople's webinar "**OF-BY-FOR ALL**: Co-Creating Programs and Developing Community Partnerships to Serve People with Disabilities in Libraries"

Reflect & Refine

- BUILD A LOGIC MODEL
- EVALUATE
- CONTINUAL REFINEMENT

Reflect & Refine

Our process empowers your maker program to be nimble, responsive, and striving for continuous improvement and growth. This involves developing systems and habits for documenting and reflecting on how the program is going, as well as refining the program to make it stronger. Reflection can be a daily practice for individuals, but program staff should also periodically reflect as a team too, perhaps monthly or even weekly until the program becomes more established.

In times when there might be a big change on the horizon (e.g., facility remodels or new initiatives), requiring more input from relevant groups, you may also need to revisit the **Listen & Discover** and **Brainstorm & Prototype** sections of the process. This can be helpful in refining your programming to allow for a more in-depth review or to reaffirm the "people and purpose" you're serving and how best to make that happen.

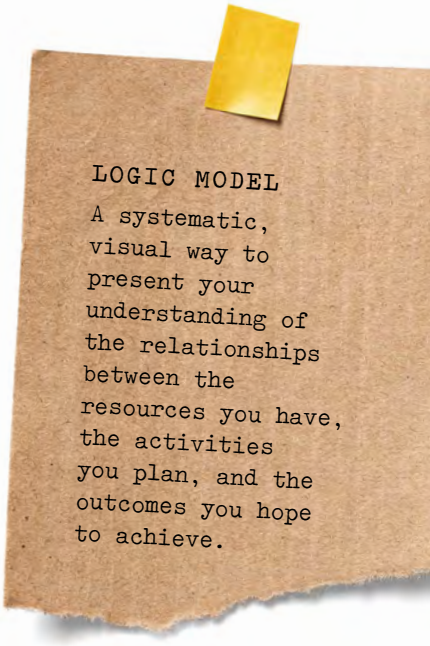
We start by introducing a streamlined way to work with your team to develop a logic model—which offers a high-level, one-page snapshot of your program as a whole, including the actions you're taking and the resources you're leveraging to make a difference for your community through making. With this groundwork in place, you can then begin to experiment with different approaches for documentation to gather feedback from program participants, both formally and informally—from the immediate feedback of a 1:1 conversation to a broad survey of your patrons.

Being a reflective program planner or facilitator requires a flexible mindset and a logical approach to problem-solving, as well as imagination, intuition, and inspiration. In this section, we also share examples of how libraries have employed this mindset to continually shift their programming in response to community needs.

Maker projects, like this one from Corona Public Library, often use very simple materials in creative ways.

BUILD A LOGIC MODEL

One of the most important functions of a logic model is as a means of communicating your project plans to internal collaborators as well as external agencies and funders before, during, and after the project. Even though it excludes granular detail, a good logic model represents those aspects of an activity or program that are most important for understanding how the effort works.



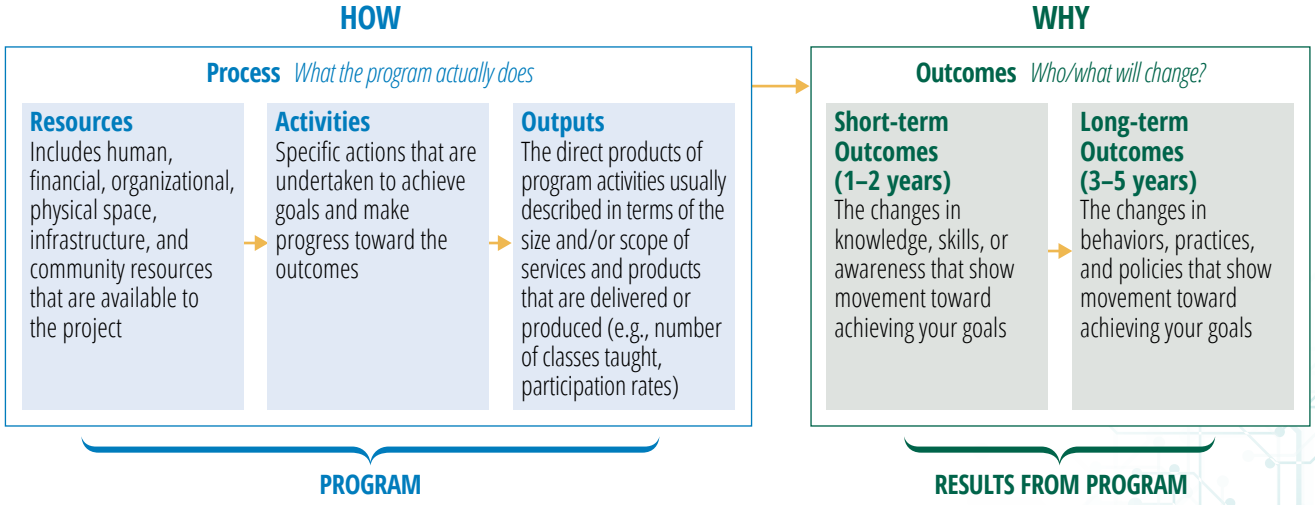
Logic models are living documents that tell the story of your program planning and implementation efforts. In most cases, logic model development will go through several drafts before resulting in a version that everyone agrees accurately reflects their story. As your strategy changes, so should the model. Remember to continue to modify and enhance the logic model as the program evolves, revising periodically to reflect new evidence, lessons learned, and changes in context, resources, activities, or expectations.

When going through this process, it's helpful to also consider what a logic model is not. Although it captures the big picture, a logic model isn't an exact representation of everything that's going on. Instead, it represents *intention*, not necessarily reality.

Anatomy of a Logic Model

A basic logic model typically has two central components—process and outcome. Process describes the program's resources, activities, and outputs (direct products). Outcome describes the intended effects of the program, which can be short- or long-term. If you've never created a logic model before, one of the best ways to get more comfortable with them is to look at an example. We provide an example alongside the Logic Model tool.

LOGIC MODEL ELEMENTS



how to CREATE A LOGIC MODEL

STEP 1

ASSEMBLE A DIVERSE TEAM

Logic models should be developed using a team approach to gain a clear understanding of your program goals, assets, and commitments. In addition to library staff, include representatives from your library administration, city or county leadership, established partner organizations, donors, or grant-making organizations.

STEP 2

CREATE A TIMEFRAME FOR COMPLETION

A logic model isn't likely to be developed in a two-hour meeting, or even two such meetings, therefore you should plan on investing the time to create it. Consider conducting a series of "mini retreats" (around three hours long) or more frequent short (hour-long) meetings, depending on what works best for the team. Be sure to keep the conversations going so that momentum toward completing the model is consistent and connected.

STEP 3

PREPARE FOR THE MEETING(S)

- Disseminate key facts about your program to your team so that everyone "starts in the same place." Prepare a presentation or report and reference documentation developed, including the People and Purpose tool, Action Plan, Budget Plan, evaluation data, and even photographs from your programs.
- Identify a note-taker, ideally someone who is consistent through the process.
- Locate the following supplies: a large whiteboard or a roughly 12-foot length of butcher paper, five different colors of notecards or large sticky notes, markers, and tape.
- Create a large version of the template provided in the Logic Model tool on the whiteboard or butcher paper. Write your Framing Question and headings for the five logic model elements (resources, activities, etc.) at the top.
- Assign a different color card or sticky note to each of the five logic model elements.

STEP 4

FACILITATE THE MEETING(S)

- Begin your first meeting with an overview of your program and an orientation to the elements of a logic model, leaving time for discussion. Use the glossary in the Logic Model tool as a resource.
- Ask participants to brainstorm ideas for each of the elements, writing them on individual color-coded cards or sticky notes and securing them under the appropriate element header. Although the logic model flows from left to right, when you're creating it, it might be helpful to fill in the boxes from right to left, starting with your short- and long-term outcomes.

TOOL

LOGIC MODEL

This tool guides your logic model creation. It includes a detailed glossary of terms, a template, and an example.

how to **CREATE A LOGIC MODEL** *continued*

- Continue in the same manner through each of the other four sections (activities, outputs, etc.) until all of the ideas fill the logic model template.
- Take the necessary time to go back and fine-tune each of the five elements, ensuring that you've kept equity and sustainability considerations in mind. Be sure to take a photo and share with all meeting attendees to reflect on and refine further.
- Once you feel you have a version that is complete, type the information into the template provided in the Logic Model tool to more easily share with others.

All of the libraries that participated in our California-based pilot project collaborated in a logic model workshop as part of their training, where they brainstormed activities and outputs, as well as discussed outcomes.

Benefits of Logic Models

There are many benefits of developing a logic model and numerous ways to apply elements of the model to your library and makerspace activities.

Provides clarity: A logic model helps keep focus on the desired outcomes. Clarifying outcomes—and then expressing what steps you'll take to achieve these outcomes—leads to more measurable results. Without this process, makerspaces run the risk of spinning their wheels and not fully accomplishing their goals as efficiently as possible.

Strengthens communication: A well-built logic model is a powerful communication tool. At a glance, it shows what a program is doing (activities) and what it's achieving (outcomes), emphasizing the link between the two.

Enhances program planning: A logic model provides a guide for current and future program planning. If a new activity or grant opportunity is presented, staff can refer to the logic model and decide if it's aligned with the program's goals and objectives.

Aids fundraising efforts: For development officers and grant writers, a logic model can prove invaluable. It clearly communicates in one page what you do and what you're trying to achieve.

Drives evaluation: While it's neither possible nor necessary to measure all of the outcomes on your logic model, it does help staff avoid having to guess which measures are most important to quantify.

Librarians discussing the various elements of their logic model.

> *The logic model forced us to examine the big picture, define steps, and see where we've been and where we're going.*

EVALUATE

Even though you're busy developing and building your maker program, it's important to take time to pause, observe, and pay attention to how things are going, so you can make improvements and changes along the way. Then, at key milestones during program design and implementation, it's helpful to take a big picture view by collecting different pieces of information to see how far you've come and what impact the program has made.

Though observing and evaluating your program requires some advance planning, our toolkit offers a variety of methods to choose from. Before deciding on one or more methods, it's important to understand what you're hoping to investigate, so you can weigh the benefits and drawbacks of each. Are you curious to know what participants learned through your program? What activities are participants interested in trying? How can your program be improved?

Keep in mind that if you're doing your own evaluation, you're going into it with a certain level of bias. You have certain goals for the program or space and a set library strategic plan that you're held accountable to. This means you may start looking for things in your data and the results that may lean towards the positive to showcase in a report for administrators or funders. Although we all have some level of implicit bias, it's important to be mindful of this as you embark on any type of evaluation.

We encourage you to partner with your frontline staff and take a team approach so that everyone feels empowered to play a leading role in evaluation. Help everyone understand that using these tools can support them professionally and assist the team to be more aware and in touch with the ongoing needs and interests of patrons. Evaluation and reflection is a continuous, interactive process that doesn't need to be a chore—it can be creative, collaborative, engaging, and fun!

Approaches to Data Collection

Data collection methods fall into two main categories—quantitative and qualitative—that both have their advantages and disadvantages. *Quantitative* approaches tend to be less time-intensive and easier to administer to a large number of participants, making them more generalizable. These approaches typically result in numbers (e.g., percentage of patrons who said they would recommend this program to a friend, number of days a program is offered, how many attended). Often libraries routinely track quantitative data like this about programs, so be sure to tap into any existing information sources and evaluation tools. However, quantitative data sometimes lacks the more in-depth information you need to inform specific changes to your program.

Qualitative approaches, on the other hand, tend to be more time-intensive and difficult to use with a large number of participants, but they provide more in-depth

information than you might get from quantitative methods. Luckily, you don't have to choose one or the other! These two methods can be combined to more fully explore the questions you have.

You also need to consider that everyone will have different preferences and comfort levels with the various types of evaluation. If someone is shy, they may not feel comfortable providing their feedback in a public way. If English isn't someone's first language, they may be less prone to do an interview with you. If someone isn't a citizen, they may be reluctant to participate in any forms of evaluation that involves them giving personal information. And if someone has a restless child or an elderly parent waiting for them at home, they simply may not be able to participate for lack of time. So experimenting with different methods for different programs and audiences is an important part of the process.

By the Numbers

QUANTITATIVE ●——— *QUALITATIVE*

Tracking purely quantitative information for your programs is worthwhile and most likely aligns with some systems you already have in place.

- How many people pre-registered for a workshop versus how many attended?
- How many first-time attendees came to your event?
- How many repeat requests are there for your program?
- How many unique visitors came to your maker web page?

Keep in mind, especially at small and rural libraries, you may never see large numbers or big growth in attendance because the population may be small and the space limited. But knowing that you have a regular, dedicated audience is one demonstration of the strength of your program.

Pay attention to circulation numbers and even general gate count. Are there more people in the library on maker program days? Are people checking out more books about arts, crafts, coding, and STEAM-related topics? When you offer a program, it's a perfect opportunity to showcase books and media in your collection that people can check out to extend their learning at home.

At some libraries, there was a noticeable difference in higher circulation numbers and a surge in requests for books in maker-related categories. For example, in the months after the small, rural Exeter Library launched their makerspace program, they moved up several notches to second place for overall circulation in their 17-branch system. At Lakeport Library, since offering their maker program to adults and children, they've noticed an increase in circulation for books related to arts and crafts, and the Zip Books interlibrary loan program has received many book requests for DIY and STEAM topics.

Surveys

QUANTITATIVE ●——● *QUALITATIVE*

Surveys can be used to get specific feedback from program participants—as well as gather input from people who have not yet participated—to find out what they'd like to see. Surveys can be on paper or distributed electronically and can be designed to be anonymous. They're an efficient way to gather lots of information from many people and to gain a representative picture of the attitudes and characteristics of a group. Though the results are typically quantitative, you can also solicit qualitative input by asking open-ended questions such as, "Is there anything else we should know?"

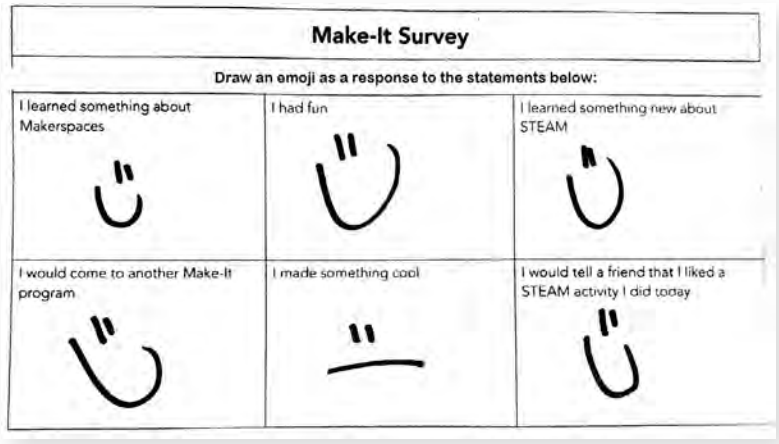
When you're designing your survey, remember to make it accessible for people with different languages and abilities. Many electronic surveys offer multiple options to accommodate universal design, so a user could utilize a screen reader, translation tools, enlarged text, and more, if needed.

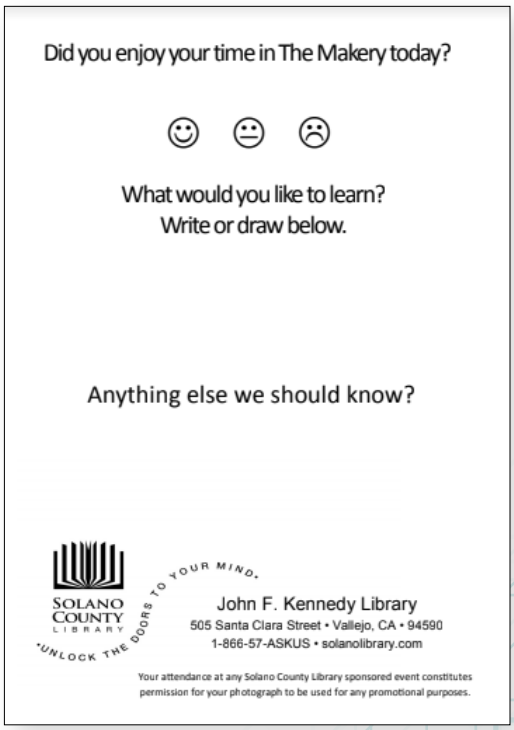
Since surveys are a common form of data collection throughout multiple aspects of life, many people can suffer from survey fatigue. To combat this, keep your surveys as brief as possible and make sure you connect with your library administration to make sure you aren't surveying the same patrons multiple times across programs. Also, remember that using surveys with young children (especially those still learning to read) is challenging, and tweens and teens tend to dislike them because they feel too much like tests that they take in school. However, there are still creative ways to use surveys with these audiences. We offer a sample survey in the Toolbox section and have included some examples to help you get started.

TOOL

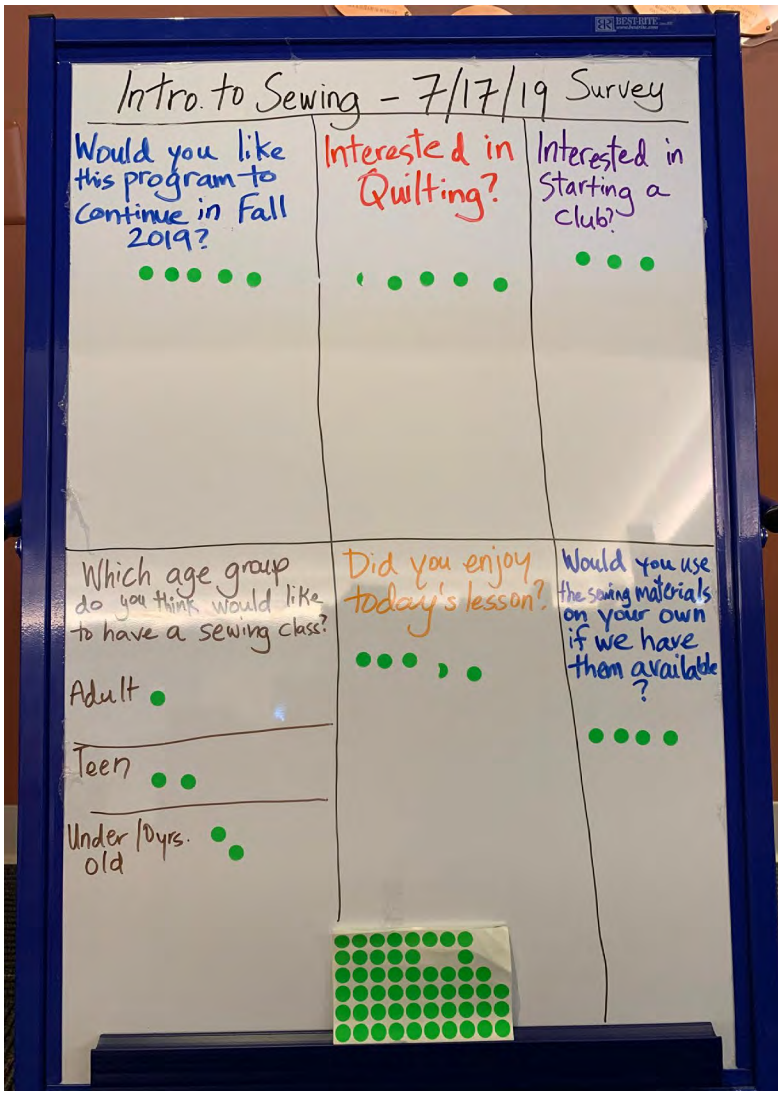
PROGRAM SURVEY

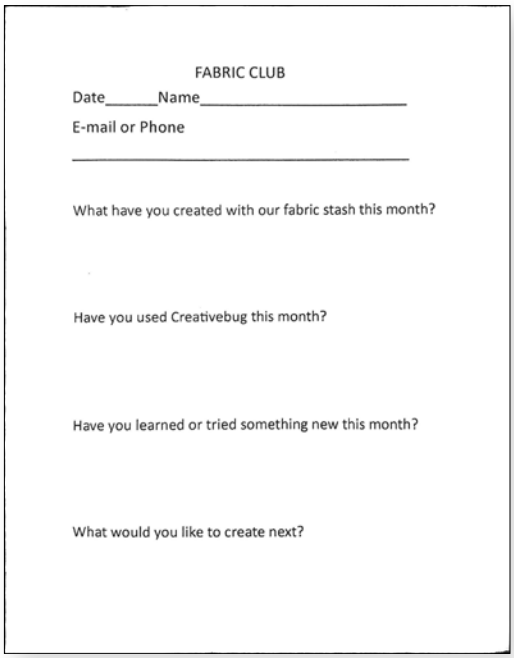
This tool provides an example survey with a variety of questions you can include or modify to fit your library's needs.





The JFK Library used simplified "emoji" surveys to get feedback from children at their programs, particularly drop-in programs and outreach events. When designing a survey like this, you could ask participants to select a response from a few emoji icons, ask them to draw their own, or provide emoji stickers or stamps to indicate their response.





FABRIC CLUB

Date_____Name_____

E-mail or Phone

_____

What have you created with our fabric stash this month?

Have you used Creativebug this month?

Have you learned or tried something new this month?

What would you like to create next?

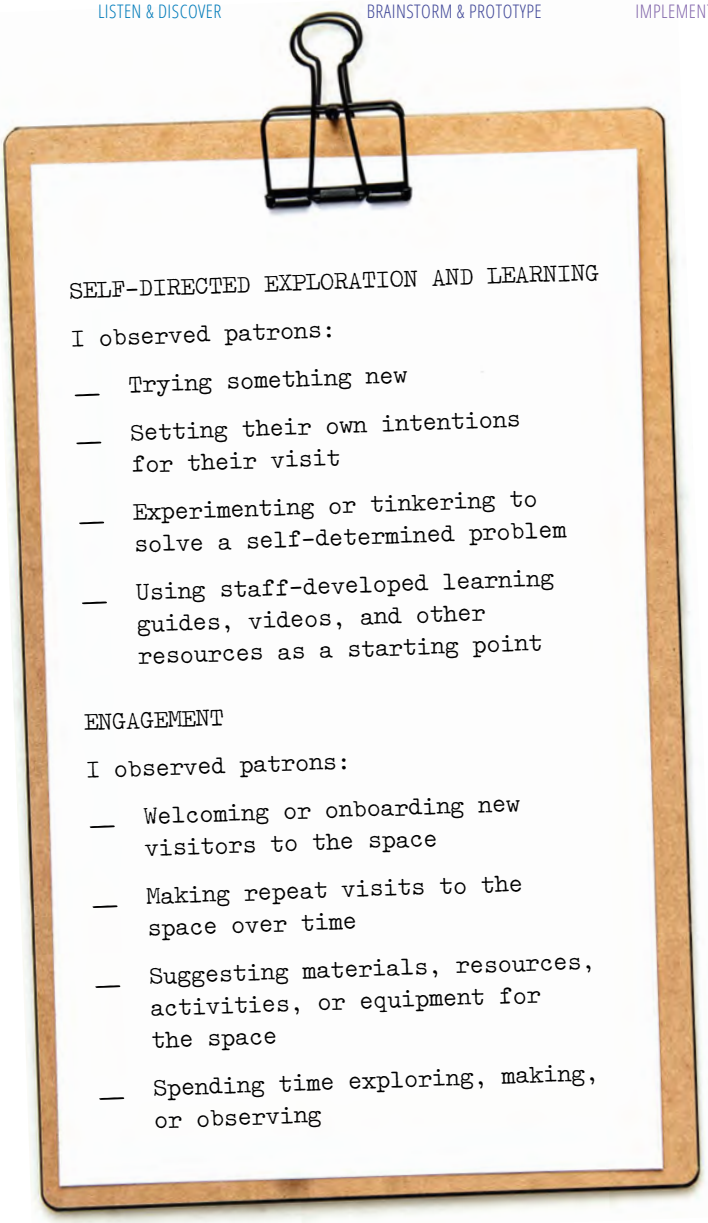
(Above) Lake County Library used this quick, simple survey after their weekly program to get feedback on what patrons were using and their interests.

(Left) Atascadero Library collected feedback on their new sewing workshop series with a board where teens provided their input using dot stickers.

Self-Reflection

QUANTITATIVE ●——● *QUALITATIVE*

Another great way to capture feedback from staff or volunteers immediately after a program is through self-reflection. Timeliness is key, so it's important to carve out time within a few hours after a program to have everyone involved write down some information about how the session went (successes and challenges) and what was seen and heard, including both quantitative and qualitative data. Although it can be challenging to get started, creating a habit of writing down ideas, feedback, and quotes right after a program fosters a culture of lifelong learning among your staff and helps you respond immediately to things that didn't work as planned.



SELF-DIRECTED EXPLORATION AND LEARNING

I observed patrons:

__ Trying something new

__ Setting their own intentions for their visit

__ Experimenting or tinkering to solve a self-determined problem

__ Using staff-developed learning guides, videos, and other resources as a starting point

ENGAGEMENT

I observed patrons:

__ Welcoming or onboarding new visitors to the space

__ Making repeat visits to the space over time

__ Suggesting materials, resources, activities, or equipment for the space

__ Spending time exploring, making, or observing

At Skokie Public Library, all three experiential learning spaces (Lab, Studio and BOOMbox) use a Google Form for end-of-shift reports. Submissions provide insight into daily happenings in the spaces that can help determine needed changes for workflows, physical space setups, coaching for staff, and equipment maintenance.

We've created a Maker Activity Log in the workbook to help, and recommend keeping these in a binder or electronic folder, filed with the Maker Activity Plan for the respective activity. The team should regularly review the comments in this binder and use the feedback to make program decisions and inform best practices. If you're planning to repeat an activity, take a look at the reports from previous sessions to get helpful advice from the last time it was offered.

TOOL

MAKER ACTIVITY LOG

This tool provides a template for collecting data for reflection after each program.

Featured here are sample questions from Skokie Public Library end-of-shift surveys, the results of which are used to help track progress toward the goals of their maker program.

Interviews

QUANTITATIVE ——●—— *QUALITATIVE*

Interviews can be a great way to get a general sense of participants' thoughts and feelings about a program and help build relationships. They can also be used to gain greater "buy-in" from partners or potential collaborators, helping them to feel more valued and have more ownership of the project. Interviews can be formal, scheduled events, conducted in person or virtually, or they can be in-the-moment conversations with participants. If you have a state library consultant, they may be able to help. You may choose to record the interviews with permission from the participants, but keep in mind that you would then need to spend time or money to transcribe the recordings.

Craft a list of questions that you want to ask people, and be consistent so you can look at the results more holistically afterward. One key advantage of interviews is that they allow you to dive deeper on anything interesting or unclear. Just listening to what people say and requesting a bit more information ("Can you tell me more about that?") can lead to the most valuable responses. You may be surprised at how much great insight people will share when asked for their thoughts!

Informally, even just striking up a conversation with participants during the program can yield helpful feedback. Ask them a little about themselves and what they like to make. Do they have special skills or experience with science or the arts? What other similar experiences have they enjoyed? Do they know others who might be interested in future programs? These conversations can be very rich and rewarding. Remember to note any feedback you receive in your Maker Activity Log.

At Corona Public Library, the Maker Exchange staff wanted feedback from teens on the different gaming and coding programs they were offering. Their staff noted that the single best way to gather frank, honest, and useful information was to sit down with a teen and ask them while they were there at the computer. Teens seemed happy to have the chance to share their thoughts, and staff were able to get specific feedback and ask follow-up questions regarding what they liked and didn't like about the software, which helped them decide what kinds of programs to invest in moving forward.

At Lakeport Library, which is in a small town rural setting, staff call maker program participants on the phone to get direct feedback about what kinds of activities they would like to engage in with their virtual maker program. When the Gilroy Library launched its first ever Mini Maker Faire, they had a person specifically assigned to interview participants with a set of questions about their experience at the event. They later used that data to provide partners with a follow-up report.

TOOL

PATRON INTERVIEW QUESTIONS

Use this tool as inspiration for interview questions to ask patrons. Modify based on the amount of time you have.

Focus Groups

QUANTITATIVE ——— *QUALITATIVE*

Focus groups typically include 8–10 people who have engaged with your makerspace as participants or partners. These group discussions are geared toward understanding their thoughts and feelings about your offerings. Rather than relying on assumptions, focus groups allow for people to bounce ideas off each other and build off one another's comments. The result is that participants feel their opinions are respected and valued.

Preparing for and implementing focus groups is time-intensive, and there can be a lot of logistics involved in finding the right people and getting them in the same room at the same time. These challenges aside, we highly recommend starting your makerspace creation process with focus groups. Refer to our dedicated section on Focus Groups in the Listen & Discover chapter for more information.

Peer Observations

QUANTITATIVE — *QUALITATIVE*

Observations help to gather information about how a program or activity actually operates, especially regarding processes. They allow you to directly see what people are doing, versus relying on what they say. In the absence of paying for an outside evaluator, observations can be done by your peers (staff, volunteer, or co-facilitator) and still provide very valuable feedback on what aspects of your programming are working well and which need a new approach.

The peer observer might be someone from another branch, another makerspace, or even a colleague from your own branch. Peer observation provides an opportunity to view a program conducted by a colleague and record information about what they see happening (or not happening). Once the observation is complete, we recommend a discussion between peers (observer and program staff/facilitator) to review and reflect on what was noted, with room for constructive dialogue. Ideally, peers should reciprocate and complete this observation for one another. The experience can prove to be a positive learning experience for everyone.

TOOL

PEER OBSERVATION

This tool includes suggested prompts for the peer observer to comment on the maker environment, the facilitation, and the activity itself.

Talk-Back Boards

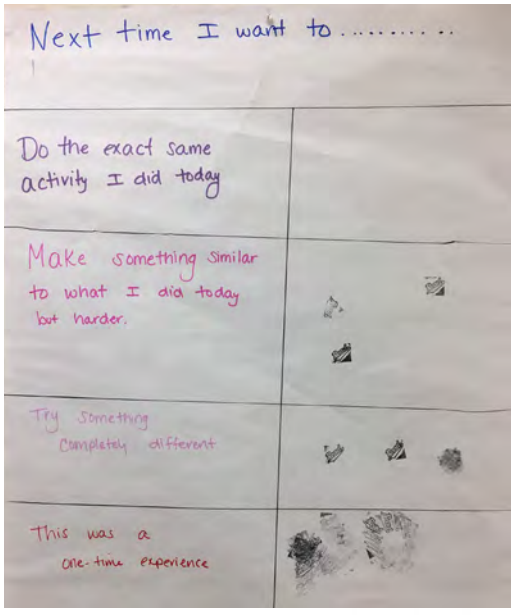
QUANTITATIVE — *QUALITATIVE*

A talk-back board is an engaging way to collect feedback from a group, where participants can see the results in the moment. They're fun and interactive for both small- and large-scale maker programs and events. You won't get in-depth responses using this type of evaluation, but you'll get a "pulse" of how the program went.

There are several ways to conduct talk-back boards. Here are two:

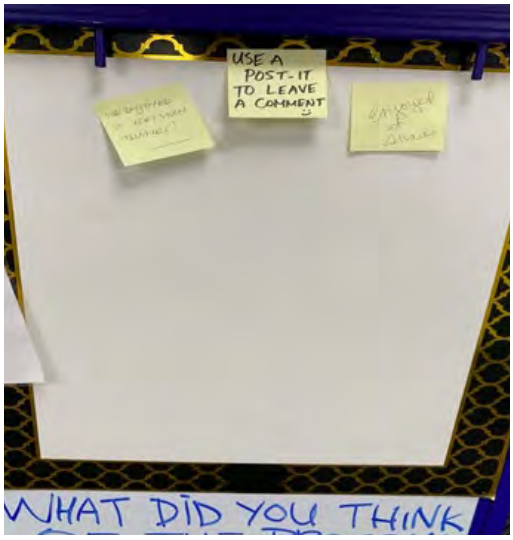
- On a poster or whiteboard, write a few statements that are related to your desired program outcomes. Examples could include:
  - » Today I discovered an interest or talent I didn't know I had.
  - » Today I gained skills that will benefit me in my current or future job.
  - » Today I came up with a new way to solve a problem.

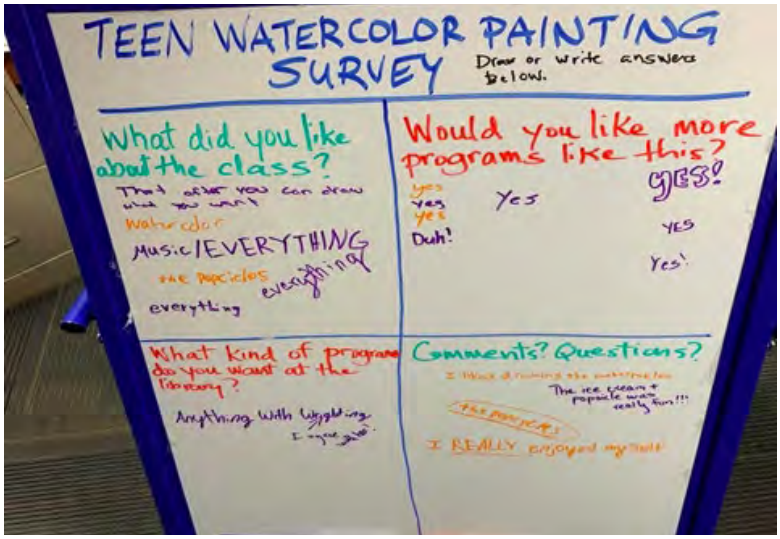
  Provide stickers or stamps to participants, and ask them to place one next to each statement that rings true based on their own personal experience. Allow them to vote more than once if that makes sense.



Blanchard Community Library's Teen Scene patrons use a rubber stamp to mark their responses to different statements posted on chart paper, providing a quick snapshot of information to facilitators.

- Invite participants to write or draw their own responses to one or more open-ended questions. They could provide their answers directly on a whiteboard or on sticky notes that they add to the board. You can add one more interactive layer by encouraging people to "like" others' responses by adding a sticker or making a mark (such as a heart or X) to indicate that they agree with the same idea. Once you've gotten responses from all, take a photo of the board so you can have a record of that feedback.





Atascadero Library experimented with different ways to collect feedback on a talk-back board. One was an open-ended invitation to write thoughts about the program on a sticky note, and the other had four specific prompts where participants wrote their ideas directly on the board.

Suggestion Box or Feedback Journal

QUANTITATIVE ——●—— QUALITATIVE

A suggestion box or feedback journal invites participants to provide opinions and more in-depth thoughts in an anonymous way. Make sure the box or journal is clearly marked and accessible to the people you hope to reach. If you want them to comment specifically about the maker program, include instructions or questions to clarify what kind of feedback you're looking for, either on the cover of the journal, on the suggestion box slips of paper, or on signs near where these are placed.

With a suggestion box, people can't see one another's comments unless you decide to share them publicly, but with a feedback journal, people can page through and see what others have written. You might keep these anonymous, or give people the option to provide their name and contact information. Consider how you might make your response to these suggestions visible—either by implementing the desired changes or by providing some general updates to the requests, such as posted notes on a bulletin board, verbal announcements during the maker program, or sharing the information in your newsletter or on social media posts.

At Atascadero Library, they routinely ask the teens for feedback on the day's activities and solicit suggestions for future things to do. One time, when staff forgot to ask for feedback, the teens took it upon themselves to start collecting the information in a journal. They simply put a date at the top of the page, passed the book around the room, and each teen provided their comments and ideas. At the end of the session, they returned it to the staff person. This approach, created by the teens themselves, has continued to be one of the ways the library gets feedback at their weekly program. And teens can see how well it works by noticing some of their suggestions taken seriously and worked into the program.

Analyze the Data

When trying to decide which evaluation method(s) to use, there are many factors to consider, including how much time you have to analyze the data. When people take the time to give you feedback, they like to feel heard and acknowledged by either seeing the change or understanding why the change isn't possible. Unless you have the time to devote to recruiting participants and conducting lots of evaluations, your sample size will be small. And with a small sample size, data might be difficult to generalize. But even a small sample can be helpful in noticing trends that can be used to inform program changes or any subsequent evaluation.

If you've never done evaluation before at your library, it might feel a bit overwhelming. What we provided here isn't intended to be a comprehensive course on evaluation, but rather a broad overview of several approaches with real examples from libraries. There are many other in-depth resources provided below that can help guide you to dig deeper into evaluation practices and data analysis.

The big takeaway is to not get swept up in all of the details, but to at least try some way(s) to get feedback and keep a record of the responses, so you can review and analyze the information and use it to make decisions on how to refine programming moving forward. Always be sure to share your findings—the successes and the challenges—with your collaborators, partners, and funders, keeping them connected to the program during this journey.

FURTHER READING

Observation Deck by Madison Public Library, in collaboration with Waupaca Area Public Library and Skokie Public Library, is a toolkit to capture and organize aha moments in hands-on library programs to illustrate their impact and support librarians in driving continuous improvement.

The **Capturing Connected Learning in Libraries** (CCLL) project is building tools for libraries to quickly and effectively assess learning outcomes for connected learning programs and spaces.

The **Evaluation Springboard** website provides a basic understanding of the why and how of evaluation. It was designed for those who want to undertake or commission evaluations in educational settings.

MakEval is creating suites of tools—including surveys, assessments, and observation protocols—that provide educators, researchers, and program administrators with information to evaluate maker programs and experiences with youth.

The **Simple Interactions** tool provides a common, descriptive language to talk about interactions in practice.

The **Learning Activation Lab** is a national research project seeking to discover what best sparks curiosity and interest for engaged STEAM learning. Their website offers a robust collection of evaluation tools.

CONTINUAL REFINEMENT

As much as we would love to have the time and space to carefully plan all of our evaluations and get quality data that informs the next stages of our programs, sometimes we don't have that luxury. In addition to the more methodical refinements you might make, your library makerspace can be a place where continuous reflection results in more rapid refinements. By adopting a mindset rooted in rapid prototyping, flexibility, listening to community needs, and constant iteration, your staff becomes an invaluable asset when the needs of the community change and a more immediate response is warranted.

Emergency Response

Across Northern California starting in 2019, the local power utility instituted regional preventative power shut-offs on high-risk days (hot, dry, windy) to prevent wildfire, resulting in homes, schools, and businesses without power for days at a time. Libraries like the one in Lakeport were provided with generator power and designated as cooling centers and a place to get internet access amid the widespread power outages. Many gathered in the library to find refuge and enrichment during these times. The emergency reinforced the notion that their community could be more resilient if the makerspace could fulfill its purpose and help bring people and organizations together.

A different kind of emergency took place in the summer of 2019 at the annual Garlic Festival, a popular food festival celebrating Gilroy as the "Garlic Capital of the World." Tragically, there was a mass shooting at the festival, where three people were killed and more than a dozen wounded. This small community was understandably devastated by grief. The library partnered with a host of local agencies and became an important asset in the local emergency relief efforts during the hours and days that followed. The library staff noted that they didn't want to cancel all of their maker programs in the wake of the shootings because they felt a need to bring people together for something positive, and arranged for art activities that promoted healing and wellness.

The COVID-19 pandemic also highlighted the adaptability, creativity, and problem-solving skills of dedicated professionals at public libraries around the country, even as their institutions were forced to shut their doors to the public and many staff members were working from home or reassigned to other roles in their towns. To meet urgent needs, library maker staff didn't act alone or in a silo—they reached out and collaborated, leveraging their active local, national, and international maker ecosystems to serve most effectively in the time of emergency.

For example, although the library employees in Santa Paula were forced to work from home during the pandemic, Adult Services Librarian Justin Formanek of Blanchard Community Library gathered all the library 3D printers, plus additional ones from

community organizations, and set up production for face shield parts in his home garage. The local paper took notice and published an article on the front page about his work. He's quoted as saying, "I have always believed that the primary goal of public libraries is to support and inform the communities we serve. Though our doors may be closed, we can still find a way to work together and use what resources we have to provide meaningful support. The face shields are just one example."

Librarian Justin Formanek created a makeshift face shield production line with 3D printers in his home garage.

JFK Library staff member Angelina Gonzalez sews masks during the pandemic. Photo by Chris Riley for Times-Herald.

Data-Informed Changes

Staff at Skokie Public Library were able to analyze user trends by creating a heatmap from the data collected via sign-in logs for their spaces. The heatmap (shown below) uses colors to represent the magnitude of different values. This helped determine and advocate for a staffing schedule with two staff members present during peak usage times for more effective service in the Studio, as well as adjusting open hours for youth spaces (Lab and BOOMbox). Over three years, using this data has resulted in adding 44.5 hours for employees and expanding the team from 7 (1 full time and 6 part time) to 9 (2 full time and 7 part time).

Day of Week	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM
Monday	4.0	6.3	8.0	8.6	6.3	7.6	7.3	8.3	7.6	7.9	5.0
Tuesday	3.2	4.5	6.1	6.2	5.2	5.4	5.6	7.6	8.2	7.1	3.5
Wednesday	4.0	5.3	6.7	8.5	8.0	8.4	8.9	7.8	8.1	7.5	4.5
Thursday	3.2	3.8	3.3	3.1	3.5	5.7	7.8	9.0	9.6	6.7	3.8
Friday	5.4	5.1	7.3	10.3	7.8	7.7	6.9	7.6	8.8	9.2	6.6
Saturday	4.6	5.7	6.8	8.2	8.6	11.8	10.3	6.6			
Sunday			8.5	14.5	17.9	21.1	19.2	9.9			
Weekday	3.9	5.0	6.3	7.3	6.1	7.0	7.3	8.1	8.4	7.6	4.6
Total	**24**	**31**	**47**	**59**	**57**	**68**	**66**	**57**	**42**	**38**	**23**

These sign-in logs also keep track of which Studio equipment is used by patrons. After one year of the Studio makerspace being open, staff were able to demonstrate the high demand of the laser cutter in the space in order to budget for a second lower-cost one intended more for beginners and smaller projects. The initial laser cutter could then be used for larger, more complex projects as well as glassware and metal tumblers. This eased up the waiting time for patrons to access the laser cutters, which continue to be the most popular piece of equipment in the Studio.

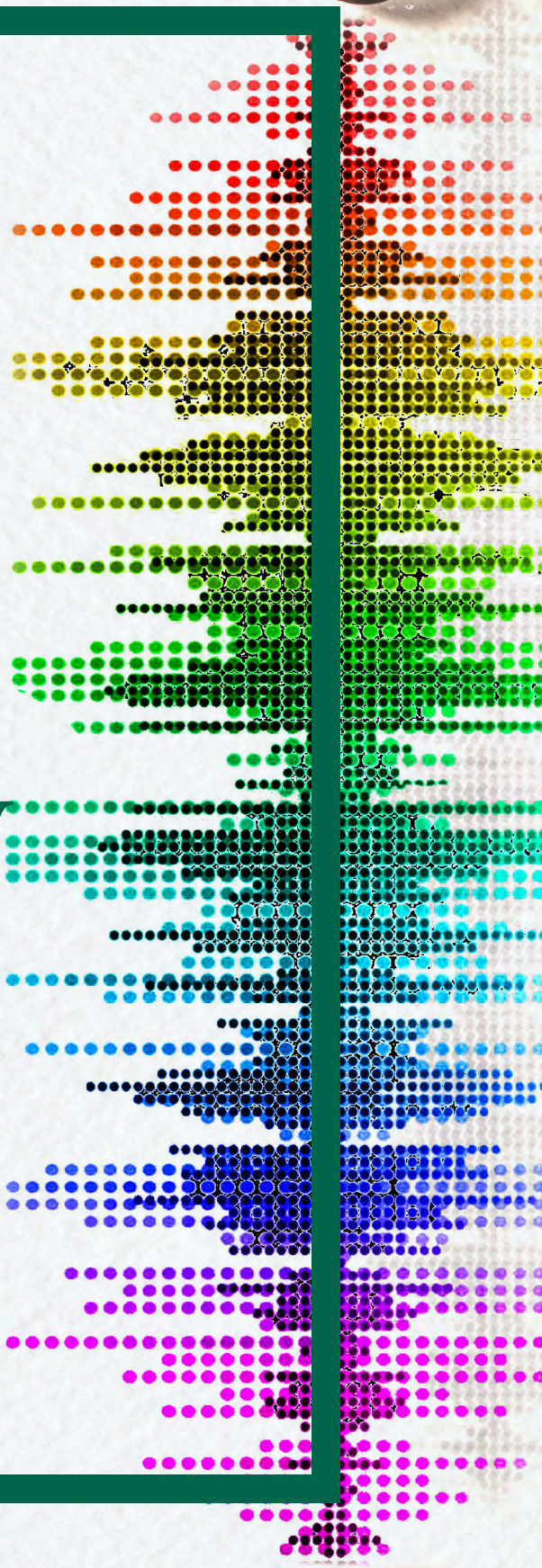
Another way Skokie Public Library makes data-informed changes is by analyzing their end-of-shift reports. Staff had reported that patrons with fine motor restrictions couldn't effectively use scissors in the space and suggested purchasing accessibility scissors. There were also reports of patrons not being able to see the laptop screens well enough to use design software on their own, and staff were able to introduce screen magnifiers for patron laptops. All accessibility tools were placed in sight of patrons with other tools like rulers and sanding blocks so patrons wouldn't have to ask to use things and could help themselves as needed.

One patron regularly uses the library-provided wheelchair, which didn't fit under the Studio tables. Two tables were raised by 4 inches to accommodate the library wheelchair, with an additional four tables placed at standing height for patrons who can't sit for long durations.

The important thing to note from all of these examples is that data can be a powerful tool and many of these refinements, although originally thought to be temporary, resulted in lasting change. It's essential to take time to reflect and evaluate lessons learned from all experiences. Many of the refinements can result in new or strengthened partnerships, unique modes of delivery for programming, or even the ability to reach new audiences. There may even be aspects of those changes that become incorporated in the next iteration of your logic model and embedded as permanent components of the next phase of your programming.

Amplify & Grow

- **BUILD SUPPORT THROUGH FUNDRAISING**
- **MARKETING**
- **DEVELOP A PROFESSIONAL NETWORK**



Amplify & Grow

With your makerspace programming launched and in effect, the focus shifts to sustainability. Each and every one of you has a part to play in the sustainability of your makerspace—which inherently includes asking for donations (whether through fundraising or grant writing), building strong partnerships, and most importantly, marketing your makerspace through telling the stories of the impact your programming has had on the community.

Without sustainable funds, the fuel for the makerspace will run dry. However, most of you chose a career in a library because you care about your community, have a love of lifelong learning, and want to help people, not because you want to go door to door asking for money. Take a moment to consider the value of what you do each and every day. Although programs at the library are offered free of charge, they are *not* free. They cost time, infrastructure, and resources. Don't be shy to say, "We want to keep these programs free of charge, so we're looking for people who might be able to donate in order to make sure they stay that way."

Equally as important as securing funds is marketing your efforts. Naturally, people can't partake in and support your programming if they aren't aware of it. Marketing is essential. Through naming your program, creating a logo, and sharing stories of impact, you'll attract the attention and support essential in keeping your makerspace going strong.

What you do has value, and creating shared value over the experiences offered helps build the trust and relationships that lead to the sustainability you're seeking. People really do want to support the library! And luckily, library staff are not alone in their efforts. They can find support through professional networks like **Library Makers** community, ecosystem members, and affiliated Friends of the Library groups and Library Foundations. These latter organizations help tremendously to bring essential resources to all kinds of library programs and needs.

Many community supporters from Corona were present for the ribbon cutting at the Maker Exchange grand opening.

BUILD SUPPORT THROUGH FUNDRAISING

One of the reasons many people cringe when they hear the word "fundraising" is that there's a lot of miscommunication about what fundraising actually is. The reality is that people want to give. It's hard for many of us to comprehend that because we're not in the position to be the "big donors" who have our names on plaques. But, if you think about it, you can likely come up with a cause you've given money to or even volunteered your time to. Why did you do it? Because it matters to you.

People want to give their time, energy, and resources to causes they care about, and our U.S. economy is set up to give advantages to the people who do. In general, the amount of money given to charitable organizations increases each year. Even in times of recession, the amounts tend to just level out before they start increasing again.

The public service initiative **Giving USA** releases a report every year that highlights who is giving and to what sectors. You may be surprised to learn that 64% of the over $319 billion dollars given in 2022 was from individuals. And if you count the additional 9% that came through bequests (mostly individuals leaving funds to an organization in their will), that number of individual givers grows even larger. Only 6% of donations were from corporations and 21% from foundations.

What does that mean? Individuals are already donating, so fundraising isn't about asking people for money as much as it's about building relationships with people who care about the work that you're doing.

Let's talk about *why* people give, from the most to least important reason:

1. **Altruism**: People want to help others in need.
2. **Trust**: People trust the organization to use their money to make a difference.
3. **Social**: The donation matters to someone they know and care about (e.g., a friend who lost a family member to cancer).
4. **Egoism**: The donor receives some sort of personal benefit (e.g., tickets to a special event or their name on a plaque).
5. **Taxes**: The donor gets a tax break.

If most donations of time, money, and resources come from individuals—and those individuals give because they care about the cause, the organization, and helping people—then, the best way you can help sustain your library's makerspace is by building meaningful, authentic, and lasting relationships with members of your community to learn what people care about and to see if you can shift that care into resources.

how to SECURE DONATIONS AND FUNDS

Here's a breakdown of the steps involved in the general fundraising cycle, along with the approximate percentage of time you should spend on each aspect of the cycle. Depending on your library, you may need to seek support from the Library Foundation before engaging in these steps. In fact, the staff at some libraries, as public employees, may even have strict limitations on how they're permitted to ask for donations. So, talk to your administration before moving forward.

> *Asking for community support, financial support, and trying to get an understanding of sustainability has stretched and helped me grow emotionally and professionally.*

STEP 1

IDENTIFY AND RESEARCH (10%)

Make a list of who you want to ask and for what. Learn about gifts they've given in the past and any key aspects of their history that could help you strike a conversation or make a connection.

STEP 2

CULTIVATE THE RELATIONSHIP (50%)

Here are some constructive ways to build relationships, engage with people, and prepare to make the ask:

- Speak at or attend various events and let people know about the library. Then, strike up conversations afterward. You'll learn what people are interested in by the questions they ask you.
- Ask people to give feedback by participating in focus groups or giving input into some part of your program development. For example, you could say, "We noticed you brought your child to our coding club each week, and we really want to hear from parents about what else we could offer."
- Notice who signs up to volunteer and ask, "How can we get others like you involved?"
- Invite people to see your space or program. "Won't you please come and join us?" Don't be afraid to invite someone multiple times and for different events.
- Keep key individuals on your Foundation board or Friends group in the loop on your efforts. They might even have personal connections who can help in your relationship building.

how to SECURE DONATIONS AND FUNDS *continued*

STEP 3

MAKE THE "ASK" (10%)

Be sure to be clear and specific about what you really need, either in a letter or in person. If you have enough scrap fabric to cover sewing programs for the next year, show someone your storage space and say, "We've had a wonderful outpouring of support for donated fabric supplies, and now what we really need is money to pay for repair of our sewing machines when things break down from repeated use."

Don't be afraid to be true to what you really need and practice in advance so you feel confident. "Thank you for being such a great supporter of the library. Did you know that if we only had $200 more, we could extend this program to 10 more kids each week?"

Remember, if you went through the first two steps, here you'll be asking someone who wants to support you already. They care about your project, your library, and the people you serve, and you're just telling them how they can help.

STEP 4

SHOW YOUR APPRECIATION (30%)

Truly take care of the people who give to your library. The recommendation is to thank donors up to seven times in the year following their donation. Why so many? Remember, we all have so much information coming at us all of the time, and one thank you letter can quickly fall through the cracks and be forgotten. It may sound like an overwhelming task, but remember that these are the people most likely to give you gifts in the future. So, your efforts will just speed up the "ask cycle" for the next time around.

Be authentic and think about ways to show your appreciation through a letter, a shoutout on social media, a mention in your newsletter, a signed card or gift made by participants in your makerspace, a plaque on the wall, a verbal mention at the start of a program, a photo of the program, holiday cards, or other method.

TOOL

SAMPLE DONATION LETTER

This tool offers ideas for how to craft the "ask." Modify this letter to support your library's specific needs or use as inspiration for an email or in-person solicitation.

Nurture Relationships

Relationships aren't random. Just as we put time and energy into our personal relationships in order for them to thrive, the same is true for our professional relationships. These relationships could lead to potential partnerships, donations, or community advocates.

Schedule meetings with influential people in your area. Look for opportunities to appear before the board of supervisors, city council, or other places to offer a report on your program. While you're there, tell stories of impact and the benefit your program has had for the people of the community. These heartwarming and inspiring stories are one of the most powerful ways to share the positive effects your work is having and why it's worth investing in. You want people to keep talking about your program, long after you leave the room. Follow up with invitations to have them tour the entire library so they see how every piece works together to support the community.

Don't forget to make time for your library administrators too! Make sure to never neglect the relationships in your own library because they're the people who will defend your ideas in meetings and promote your program to patrons at the front desk.

At this point, it's important to revisit your Maker Ecosystem Map from the **Listen & Discover** chapter, and refresh it:

- Have you solidified any partnerships since you first started?
- Are there new people or organizations on your radar that you can add to the map?
- Do any of these organizations have resources that you need?

When approaching potential partner organizations, we often first think about what gaps they can help us fill. But remember to share your staff "roster" that outlines the resources, capabilities, and skills that you're bringing to the table as well as details on the patrons you serve. Many organizations have philanthropic goals, and libraries can help them reach certain populations or elevate their reputation in the community. Relationships are a two-way street, and you don't want a potential partner to feel that you're asking them to carry the load.

Write Grants

Although large national grants are very tempting, they're often fiercely competitive and hard to obtain without professional grant writers at your disposal. However, local and regional grant opportunities provide a wonderful avenue to gain the funds you need to start or support your operations. A few ideas to start with are banks, energy and utility companies, hospitals, and large chain stores, as these can have a required community donation program built into their missions and may not always be listed in grant databases.

Keep in mind that many funders look for evidence of strong partnerships in their proposals. Think about how you might leverage the partnerships you've forged with organizations on your Maker Ecosystem Map. Identify one, and ask them to brainstorm a project you could co-create. Ask for a letter of support that highlights your partnership, describes how your missions align, and shows why you're a good fit.

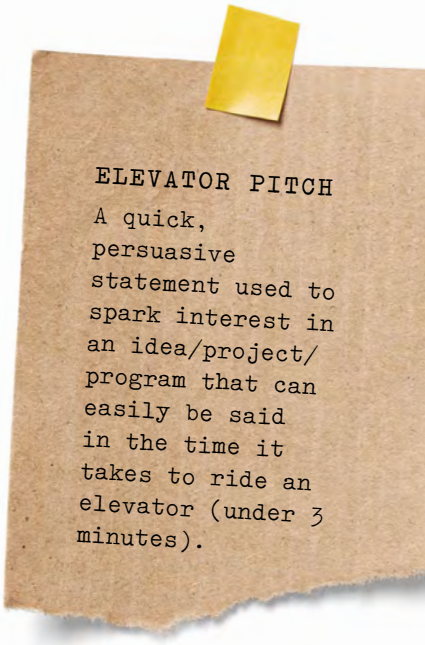
Remember that funders are looking for clear and reasonable project plans with well-thought-out budgets. In fact, many of the resources you've already created as part of this toolkit can be used when writing a grant. Depending on the proposal, think about how you can incorporate the following:

- Talk about your **focus groups** and what you heard about the needs in your community.
- Share your **Framing Question** to show the problem you're trying to solve and the audience you're aiming to reach.
- Use your **SMART goals** to clearly outline what you hope to achieve with the funds.
- Use descriptions, photos, and feedback from your **prototypes** to show that you have the capability to bring this project to life.
- Point to your **logic model** as a clear and brief overview of what you're trying to achieve and how you'll know if you're successful.
- Use the **budget planner tool** to show how you'll thoughtfully spend funds, how much these programs cost in staff and volunteer time, and how you'll leverage funds with donations and other funding sources.

Don't be afraid to reach out to the program officer or grant monitor to share your ideas. Most are more than happy to help and can give key advice on how to shape your proposal so it has the best chance for success. Remember, there are busy human beings on the other side who will be reading your proposal. Make sure you read through the entire announcement, fill out all the portions, spell-check, and follow the directions. And always ask another person to give it a final read to help point out things that may have been overlooked.

Once a grant is awarded, consider where you'll house the funds (e.g., Foundation, library administration). Some libraries find that they can encounter barriers and delays in accessing the funds due to systematic delays with their civic administration; it can often help to store the funds with the Library Foundation to avoid those delays. This will vary based on how your system operates, but it's important to make a well-informed decision so you'll be able to carry out the work in a timely way without too many roadblocks.

Develop an Elevator Pitch



Makerspaces can be hard to explain, especially if the person you're talking to has never seen one. And asking for help or funds can feel daunting. But, remember that most people know the sense of pride that comes from building something by hand, and they can understand the value of offering learning opportunities to people who might not otherwise have access to tools, materials, or creative experiences. Before approaching someone to request donations or funds, it's a good idea to plan what you want to say in advance by drafting a simple elevator pitch.

This statement should grab people's attention and make them want to get involved, take action, or find out more. It should be simple and concrete, while also conveying your purpose and unique approach to solving the problem. Upon hearing it, the listener should have a clear mental picture of what you're trying to accomplish. Be sure to take time to go back to your focus group results and revisit your Audience Statement, Environment Statement, and Framing Question before diving into building your elevator pitch.

Once you've developed your elevator pitch, the next step is to think about who you'll use the pitch on and test it out.

- **Practice your elevator pitch.** Start saying it to anyone and everyone who will listen: friend, neighbor, barber, mechanic, etc. Libraries are a community hub, and the more people are aware of the services the library offers, the better. Who knows—you may find a new supporter in an unexpected place. This is true even of your own patrons. How many of them really know about all of the services the library has to offer? And how much do you really know about your patrons' backgrounds and skill sets? Strike up a conversation and practice your pitch!
- **Share your elevator pitch at a staff meeting.** This can help ensure that your staff and administrators communicate a consistent message about the purpose of your makerspace—whether they're in the library or the community at large.
- **Review your Maker Ecosystem Map.** Identify at least two new potential partner organizations from your ecosystem map and reach out to them. Your elevator pitch is a great way to introduce yourself and get the conversation going, whether verbally or via email.
- **Outline actionable steps to take in the next several months** to engage and cultivate these relationships. Invite them to your library events, ask to observe their programs, or follow their work on social media.

Rest assured that you're the experts about what your community needs and how your library can help. So while practice is important, it mainly helps to build your confidence. What people will connect with is your authentic passion about why you're excited and the impact you see happening.

TOOL

ELEVATOR PITCH

This fill-in-the-blank exercise pulls from many of the statements you've already created. Use the examples provided for inspiration.

If people want to hear more beyond the pitch, that's a good sign that your pitch was successful! Be prepared to share stories of the change you've seen in your community as a result of your program to help keep the conversation moving forward. Think about how you would like the listener to respond. Are you asking them to come to the library? Grab a cup of coffee to discuss more? Hang up your flyer? Sign up to be a volunteer? Join your mailing list? Make sure to end with a clear invitation to action.

Young builders participate in the Earthquake Shake Building Challenge at Corona Public Library.

MARKETING

Just as planting seeds in a garden takes time, care, and consistency, so does growing your maker program—and marketing is key. There are many reasons to invest time and energy into creating a marketing plan for a maker program. With creativity and strategy, you can:

- Build your attendance and bring in new participants.
- Inform the community that the library is offering diverse, innovative programming.
- Make it easier to communicate with partners, community members, and others about your good work in meeting real, local needs.

Marketing takes sustained effort. If you've never offered sewing classes or a coding club before, it's unrealistic to expect that you'll have a full house the first time that you do. A solid, consistent marketing strategy is central to helping you achieve your goals.

Share Your Vision

In many of the communities we worked with throughout California, we discovered that very few people had ever heard of makerspaces or the Maker Movement. During initial focus groups, we spent a lot of time illustrating and explaining what we meant by "making" and "makerspaces." If you hope to reach people who may not be familiar with makerspaces already, make sure your marketing clearly communicates what your maker program has to offer. Sometimes a picture can speak volumes, so do your best to show, as well as tell. Invite people to drop in and watch a program, bring photos or examples of things people have made to meetings and outreach events, or actually make something to give to a volunteer, fellow staff member, or potential partner.

Library staff that we work with shared insight that word of mouth is the most powerful method they use to build their program. Always end your programs by asking everyone to invite someone to come with them next time or to post about what they did online. Make sure all your staff—not just you—know how to describe and invite people to the makerspace. Talk about the program when you're out and about, and keep photos on your phone that you can share with people who are curious, so that they can see some of the creative programs you're offering. Remember that any growth is still growth!

Name Your Program

What activities and features are included as part of your makerspace? All arts programs? Science programs, digital media, and coding programs? This can be a great time to go

back to your Program Inventory from the **Listen & Discover** chapter, re-evaluate which programs fall under the umbrella of your makerspace, and put them under one name. The name you choose can help you refer to your library's group of diverse programs without having to individually name them all and can help to promote and grow the makerspace.

Don't feel that the name has to include the word "maker" in it. The name should be meaningful to you and resonate with your community. The name can celebrate making and innovation—like Creation Station, Maker Exchange, Spark Place—while others can highlight the people it serves, like Teen Scene. A great way to gain support for the name is to engage patrons in the naming process. You can have a bulletin board where patrons can write different ideas for names and "vote" with stickers for their favorites.

The Ponderosa Library invited patrons to suggest names for their new makerspace program, encouraging suggestions in both English and Spanish.

Create a Logo

Along with your program name, you may want to develop a logo that you can use on all of your promotional materials. This small visual reminder will help your participants recognize and remember the maker program and its name. If your library has a marketing department, they might be able to help you with the design. If not, there are free tools that you can use to create a logo quickly and easily, with an online graphics program like **Canva**, or a specialized logo-generation tool such as **LogoMakr** and **LogoGarden**. Plus, there are dozens of logo programs for smartphones or tablets available from your app store. You can then start to label things created in your space with your logo, so others in the community may find out about and want to check out your programs.

Carroll County Public Library's makerspace is called Exploration Commons at 50 East and includes a hint to their location in the logo itself.

The Greene County Public Library's Spark Place logo uses a lively font with a graphic touch reminiscent of a spark or a flame.

Woodland Public Library's Square One logo would make any librarian smile, since it includes 745.5, the Dewey Decimal classification number for The arts –> Graphic arts and decorative arts –> Decorative Arts –> Handicrafts.

Promote Your Program

First things first. Make sure your program is visibly promoted inside your own library without overwhelming patrons with signage. Patrons should be clear how, where, and when to access your offerings. The pro version of the online graphic design program Canva is available free to libraries and makes it quick and easy to produce eye-catching graphic posters and flyers for print and digital use.

Remember the power of word of mouth, too. Has the circulation staff been kept informed about your upcoming programs so they can share information with patrons? Consider placing a few maker creations near the circulation desk and throughout the library to catch patron eyes and generate conversation.

Don't forget that the library website is an important place for your program to be visible. Ask the digital services staff if you can have a web page on the library site dedicated to the maker program, where you can show the logo next to a description of what you offer.

Think about your target audience and the best way to reach them. To find out how they're most likely to discover your offerings, you may want to survey, conduct an informal interview, or run a focus group with some members of your target audience to get more detailed information on how they find out about activities that interest them.

Sometimes, using a partner organization is the best strategy for promotion. For example, if you want to reach elementary-age kids, you might send flyers electronically to schools so they can distribute them to families via their weekly news. Remember that just because you use Facebook or your local paper to find events in town, that doesn't mean your target audience uses those same resources in the same way.

Show, Don't Tell

Social media platforms, in particular, offer not just the opportunity to share information about your program, but also to generate discussion and build a community of makers online. Depending on who you want to reach, you can strategically decide what platform to use—whether it's Facebook, X (formerly Twitter), Instagram, Discord, Snapchat, YouTube, or TikTok.

Since these are all *social* platforms, the kind of posts that get noticed and shared have to do with people or unique things that people do. Photographs, videos, and images also tend to get more traction than text-only posts. And stories or examples of what the library offers are more effective at getting traction than just promotion of a particular event.

With permission, share pictures of exciting and interesting creations being made in your programs and the people who made them. **This Facebook post** from Exploration Commons at 50 East is a good example. Remember that social media platforms are a great vehicle for distributing your original DIY instructions for maker activities to do at home, too, like this **YouTube playlist** from Pikes Peak Public Library offering instruction for an assortment of projects to make at home.

We know that in some libraries, staff might have limited access to post on the official social media account. One way to still get the message across is to invite your participants in on the social media action. Develop a hashtag that is unique to your space (e.g., #MakerExchange or #TheMakery) and ask participants to post pictures of things they've made at the library using the hashtag. If possible, ask them to tag the library's social media account in the post too. Pay attention to what the community posts and

help celebrate their engagement online. This is an especially great way for teen programs to gain a larger audience, or to capture lots of examples to inform a community event like a local Mini Maker Faire. You may be surprised who starts to follow your library's work.

Stories of Impact

One of the most important things you can do with your marketing is to relate personal stories to illustrate how the program is making a positive impact on individuals and the community as a whole. These stories, if short in length, could be shared on social media, and longer stories could be featured in your newsletter. Remember to share these stories with library administration and in reports to the board.

Stories like these are also great features for the local newspaper, radio, or television station. But for media outlets to know about your work, you'll need to reach out, invite them to your program, and send them information, including press releases and your elevator pitch. If possible, arrange for a couple of your regular participants to talk with the reporter, or ask if they might be willing to pose for a photo. Coverage of this kind has the potential to reach a wide audience and highlight the exciting work you're doing.

Remember that stories can be easy to forget, so it's important to make a habit of writing them down on a regular basis. At the end of the year, try gathering your most impactful stories in an annual report to share with your administration, city council, and Foundation board. Stories are powerful tools not only for marketing but also for fundraising purposes.

When Exeter Library wanted to generate excitement about the launch of their tech-forward maker program, they contacted the local paper with the details, resulting in **a story** about 3D printing and coding at their branch. In rural Berryville, MS, the public library used the local paper to help announce a new type of Craft and Chat program they were offering for adults. News coverage is especially helpful if you plan to host or partner in a large community event. Reach out with at least a week or two of lead time, so the press can plan for the feature and arrange to visit. Once your program is featured in the news, don't forget to share that content on your social media pages.

> *The makerspace could draw people who wouldn't normally come to the library and open up a whole new world to so many people.*

FURTHER READING

For practical, current advice on how to market library programs and services, explore **Angela Hursh's YouTube channel** and **Super Library Marketing blog**, as well as **Ned Potter's blog**.

This **short article by Kerry Rego** lists several excellent online tools to help create and manage digital marketing content.

The following tools can help you measure and track the results of your marketing efforts:

- **Bitly** allows you to shorten, customize, and track links.
- **Eventbrite** allows you to set up and keep track of event registrations. You can then track your links, email attendees, and monitor page views.
- **Google Analytics** helps you understand how users are engaging with the content on your website. You can ask the person who manages your library website if they could generate reports related to the program page for your makerspace program.

DEVELOP A PROFESSIONAL NETWORK

One thing that makers and librarians have in common is a generous approach to openly sharing information. As a professional in the library makerspace domain, you should share information freely, not just with the people your program serves, but also with other maker program managers, both in other libraries and across the broader landscape of the Maker Movement. This sharing of knowledge and experience between people of all levels—from novice to expert—provides a great support system, and the amount of time you personally invest in these connections with colleagues helps contribute information and encouragement not available from other sources.

There are many benefits to developing your own personal professional maker network:

- Find great resources and program ideas from other makerspaces.
- Problem-solve with others who understand you and your situation.
- Collaborate both regionally and globally on initiatives and projects.
- Be the source, and the recipient, of encouragement and support.
- Learn about grants and other potential sources of funding and materials.
- Amplify the reach of your local program.
- Learn professional tips and best practices.
- Be aware of trends in makerspaces.

> *I'm so glad I joined Library Makers. I feel like all the questions I haven't had the time to research in the past four years are here and answered!*

How to Connect

Start by paying attention to what's happening outside of your library, both locally and beyond.

Tap into your local maker ecosystem. Become known in your local area by revisiting your Maker Ecosystem Map, reaching out to key individuals, and introducing yourself and your program. Attend maker events in local schools and organizations, and find out if anyone is hosting regular "maker meetups," either in person or online.

Find professional connections in other libraries. Chances are there are other librarians in your region who are dabbling in maker programs and would love the opportunity to network and share with you. Ask around to find out who in your region or state is also trying to create a maker program. Creating just one or two professional connections of this kind can provide the support you need to make your work more fun and rewarding.

Expand beyond your area. Attend a few maker-focused professional development trainings, conferences, or events. Visit other makerspaces, and invite people to visit yours. Observe and listen as others share both successes and failures of their maker programs.

Pick a few inspiring makers to follow on social media. There are lots of active and interesting maker accounts on X (formerly Twitter), Facebook, and Instagram, as well as many YouTube channels with excellent tutorials for projects. Remember that there's a person behind each one of those accounts, and they started out just like you.

Communities of Practice

Wondering where to begin networking? We've compiled a list of inspiring maker, tech, and educator communities that you can connect with, subscribe to, and follow on social media:

Library Makers: A Community of Leaders and Learners is an online community that we, the authors of this toolkit helped launch. It's for people who run programs and manage spaces for making in libraries. Whether you're just starting out in the world of making, or you've been at it for years, Library Makers is the place to collaborate and connect with other library people who develop and deliver maker programs. The website hosts a newsfeed message board, monthly learning events, and more.

Make Community (and Maker Faire) is a membership-based online community for makers from the publishers of *Make:* magazine and the founders of Maker Faire that serves as a hub for Maker Faire worldwide.

Nation of Makers (NoM) is a coalition of diverse organizations that are working together to support the maker community through community building, resource sharing, and advocacy. They have a specific working group dedicated to libraries as well.

The Programming Librarian is a site from ALA that provides the resources, connections, and opportunities libraries need to fill their role as centers of cultural and civic life.

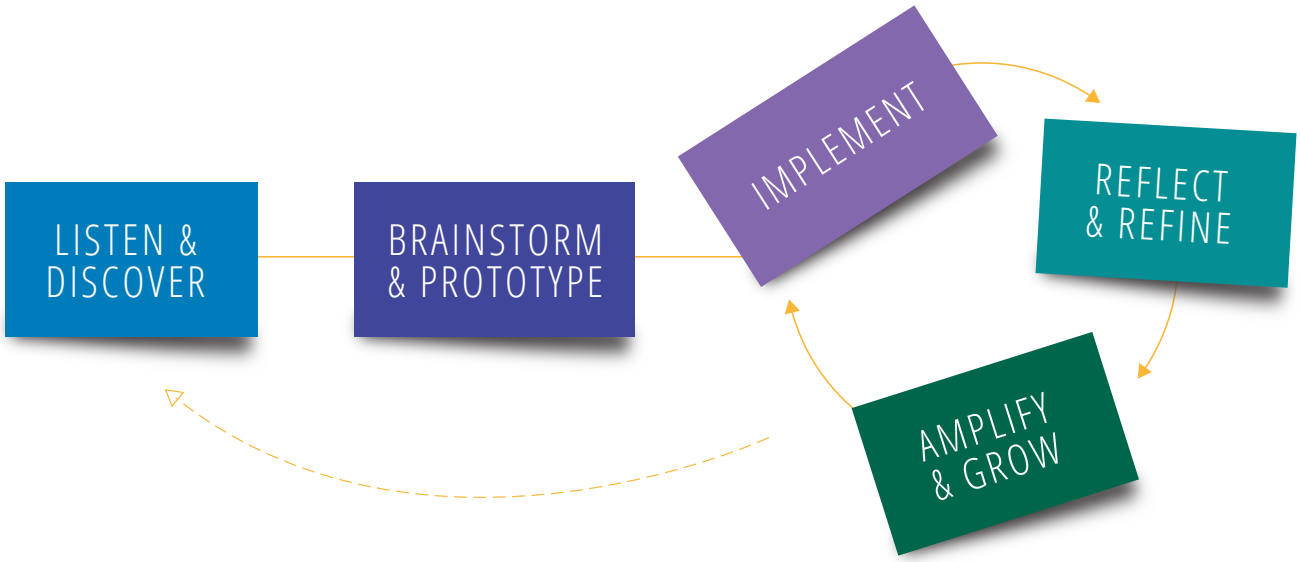
ReMake Learning, a network established in 2007, is an open group of interconnected, creative, and innovative people and organizations in the greater Pittsburgh region.

The Tinkering Studio from the Exploratorium Museum in San Francisco promotes scientific exploration through creative tinkering, and their website offers project ideas and educational resources.

YOUmedia Network Community of Practice (CoP) is a free and open platform for all staff from libraries, museums, etc., serving teens to share, download resources, and join conversations.

Next Steps for Your Evolving Makerspace

At the core, the process we share on the pages of this toolkit is just that: an ongoing process. Creating a vibrant makerspace program in your library requires not just the necessary foundational work—built on listening to your community, mapping your local ecosystem, and identifying your resources—but it requires continuous evaluation and adaptation. As we mentioned in the introduction, rather than all of the steps of the process being strictly sequential, they form a holistic process, parts of which are inherently recursive.



And while the work may seem daunting and overwhelming at times, the impact that this programming can have on your community, and the opportunities it can present, are well worth the effort. We were certainly endlessly inspired by how individuals and communities were affected across the board at each of our pilot libraries. If libraries set the stage for community innovation and creativity, they will be poised to meet the ever-evolving needs of their patrons and provide access to new technologies, innovations, and ways of thinking.

Today, the makerspace community is worldwide and the conversation is dynamic. Be sure to add your voice by documenting and sharing the powerful work that you do. Just as there are countless resources available online and ways to connect with fellow makers (and librarians!), your story might inspire someone else to embark on the worthwhile journey of bringing hands-on learning and the maker mindset to their community.

FURTHER READING

The **Makerspace Librarian's Sourcebook** includes everything libraries need to know about the major topics, tools, and technologies relevant to makerspaces today.

Maker Education Initiative's **Youth Makerspace Playbook** guides you in crafting spaces that are reflections of everyone in your community, especially the youth who benefit from them.

Making to Learn chronicles the creation of the Maker Lab at the Chicago Public Library, including the first six months of operation and initial findings about the space and the people who visited.

San Mateo Public Libraries' **Everyone Is a Maker: Makerspace Master Plan** provides a framework for future decision-making for all library facilities and programs around making.

YALSA's **Making in the Library Toolkit** provides library workers who work with tweens and teens the materials and resources for professional development, outreach, collections, and programs to successfully integrate the maker mindset into programs and services.

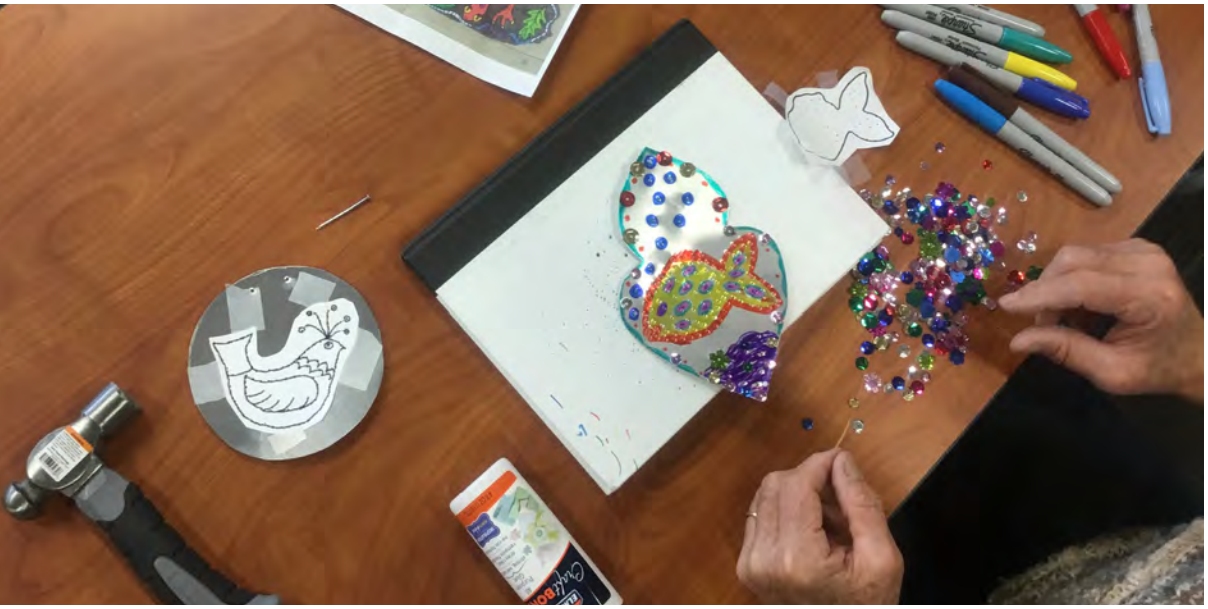
Snapshots

- ATASCADERO LIBRARY
- BLANCHARD COMMUNITY LIBRARY
- CORONA PUBLIC LIBRARY
- EXETER LIBRARY
- FELDHEYM CENTRAL LIBRARY
- GILROY LIBRARY
- JOHN F. KENNEDY LIBRARY
- KINGS COUNTY LIBRARY
- LAKEPORT LIBRARY
- PONDEROSA JOINT-USE BRANCH

ATASCADERO, CALIFORNIA

ATASCADERO LIBRARY

Offering the space, equipment, instruction, and tools to help youth foster a love of learning, gain new skills, and pursue their own creative ventures



The A-Town CreateSpace empowers teens to contribute their own ideas and interests to help drive program content in a weekly creative makerspace program.

Every week, teens are asked for feedback and program ideas, and the staff is quick to respond and provide activities they request. Inspired by this method, several of the young participants have asked if they could facilitate a workshop to share an interest of their own with their peers.

Creative work made by teens is displayed around the library and helps create a sense of ownership and pride. This display case is in the adult quiet reading area, in hopes that it might inspire parents to bring their teens to the program to explore arts, technology, and gaming.

SUBURBAN LOCATION
Local population
30,330 (town)
64,386 (county)

LANGUAGES OF PATRONS
English, Spanish

14 BRANCHES
in San Luis Obispo Library System

MAKERSPACE STAFFING
2 full-timers (25–60% of time)
2 part-timers (10–25%)
6 volunteers

POPULAR ACTIVITIES
Paper crafts, fiber arts, fine arts, and making with repurposed materials are all well-received.

FAVORITE TOOLS
Permanent markers! No matter the project, markers are always needed. The button maker is also a huge hit.

A-Town CREATESPACE
for makers, artists, & crafters

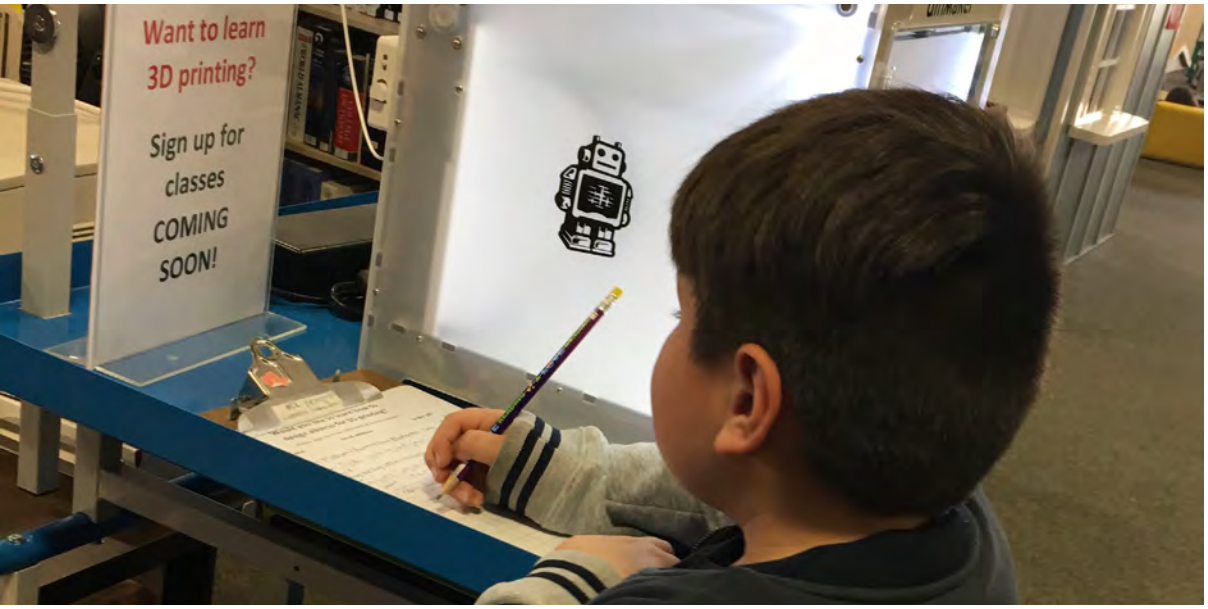
STAFF SUPERPOWER
Soliciting feedback from teens and using it to improve the program has worked to gain trust and increase engagement.

"We highly recommend finding ways to display patron work. They take great pride in completed projects."

SANTA PAULA, CALIFORNIA

BLANCHARD COMMUNITY LIBRARY

Providing the community opportunities for creativity, exploration, and innovation through STEAM activities that educate and inspire



This flexible maker program is hosted in multi-use spaces for tweens, teens, and adults, while collaboration with other libraries through the Maker Box Collective helps expand offerings.

Access to 3D modeling and printing were not available in the area until the tools came to Blanchard Community Library. Patrons of all ages were excited to learn these skills. Teens, for instance, were introduced to Tinkercad modeling software and quickly started modeling and building characters, race cars, and more.

Space is limited in this small library, so flexibility is key. The team sets up activities in the program room, the main library area, or wherever they can find a spot to support creative exploration with arts, crafts, and STEAM activities. The program name "mobile make" implies their flexibility in setting up anywhere.

RURAL LOCATION
Local population 31,138

LANGUAGES OF PATRONS
English, Spanish

SINGLE BRANCH LIBRARY

MAKERSPACE STAFFING
3 full-timers (10–30% of time)
2 part-timers (10–30%)
Volunteers

POPULAR ACTIVITIES
The 3D design classes and 3D printing are very popular and bring new people to the library.

FAVORITE TOOLS
The 3D printers and Tinkercad design program are the most sought-after.

mobilemake

STAFF SUPERPOWER
Staff enthusiasm and teamwork help complement and encourage each other's strengths.

"Try to integrate maker projects into the library's main space. People are excited to see this new technology as it's working, become interested in learning more, and even sign up for a class."

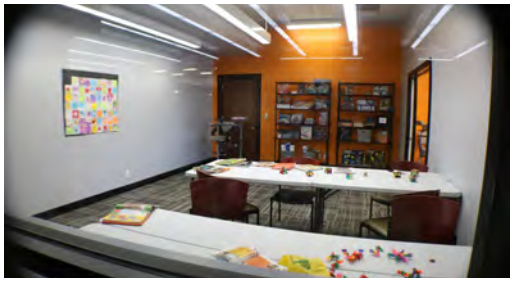
CORONA, CALIFORNIA

CORONA PUBLIC LIBRARY

CITY OF CORONA LIBRARY AND RECREATION SERVICES

Providing a collaborative environment to develop the creative and technical skills our teen and adult patrons most desire

Maker Exchange delivers a robust schedule of creative arts and technology programs to inspire and educate in library spaces, in the community, and virtually.



Maker Exchange offers daily activities from its dedicated space—in addition to community outreach and virtual programs—serving teens, adults, and families with a range of activities, including art, 3D printing, Silhouette cutting machine, and coding. There are workshops and lessons offered, as well as open hours.

The Maker Exchange team developed community partnerships that have strengthened their program and helped them make an impact. Patron feedback is regularly used to shape what programs they offer. With access to in-house marketing support, they've been able to develop branding that is cohesive and engaging.

URBAN/SUBURBAN LOCATION
Local population 167,000

LANGUAGES OF PATRONS
English, Spanish, Mandarin, Arabic

SINGLE BRANCH LIBRARY

MAKERSPACE STAFFING
3 full-timers (15–20% of time)
1 part-timer (35–100%)
4 volunteers (100%)

POPULAR ACTIVITIES
Digital design, coding, engineering challenges, art classes, and 3D modeling are in demand.

FAVORITE TOOLS
The Silhouette cutting machine is loved by teens and tweens, helping them to quickly progress from paper creations to vinyl designs.

MAKER EXCHANGE AT CORONA PUBLIC LIBRARY

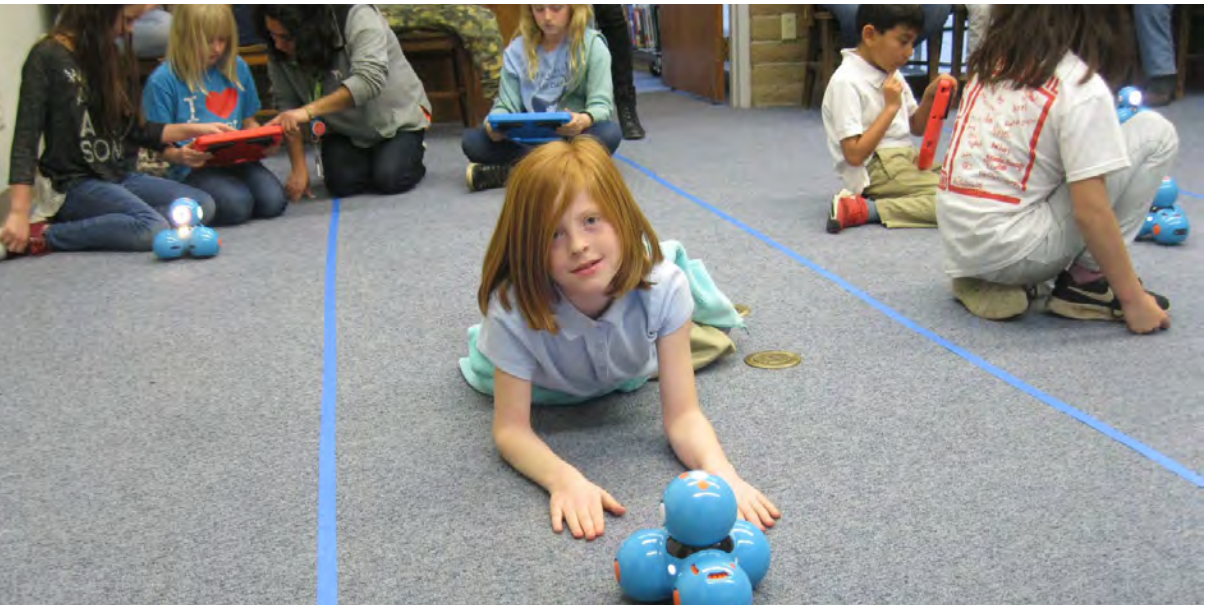
STAFF SUPERPOWER
The multifaceted staff are open-minded, flexible, and have a strong background in education.

"Don't grow attached to any one idea. A makerspace is like starting a business—if you focus on a vision, you lose sight of the goal, but if you focus on the goal, the vision will manifest itself."

EXETER, CALIFORNIA

EXETER LIBRARY

Exploring science, technology, engineering, arts, and math through making, tinkering, creating, designing, playing, collaborating, innovating, and exploration



Hosted in a multi-use room, this makerspace programming offers creative activities for patrons of all ages.

Exeter Library's makerspace features science and technology activities for children, from coding and robotics to engineering. Reflecting the community's agricultural roots, they often highlight related program topics, including a monthly Learn to Use a Spinning Wheel workshop and a presentation about agricultural drones.

This makerspace thrives on highlighting local talent. For example, their floral design workshop was facilitated by a high school student who had started a floral business from her home. All participants loved the program. Afterwards, the student felt empowered to offer floral design classes at a local coffee shop and expand her business.

RURAL CENTRAL VALLEY LOCATION
Local population 10,533

LANGUAGES OF PATRONS
English, Spanish

17 BRANCHES
in the Tulare County Library System

MAKERSPACE STAFFING
2 full-timers
1 part-timer
6 volunteers (3 hours/month)

POPULAR ACTIVITIES
Robotics programs for youth and paint night events for adults are well-received.

FAVORITE TOOLS
Electronic tools such as Sphero, iPads, Ozobot, Dash Robotics, and LittleBits are very popular.

STAFF SUPERPOWER
Resourcefulness brings local talents to the makerspace, allows adaptation to patron needs, and helps invite new people.

"Be patient and understanding of your community, but most of all, have fun!"

SAN BERNARDINO, CALIFORNIA

FELDHEYM CENTRAL LIBRARY

Striving to create a safe, welcoming community place for all ages to learn and be creative

Intergenerational programming is delivered in a dedicated space that brings people together for familiar arts and crafts, as well as new technologies.

Serving one of the most economically challenged urban areas in the state, Creation Station provides a dedicated space for people of all ages to experience craft, fabrication, and technology programs two to four times a week, including weekly family crafts, teen/adult coloring club, monthly VR nights, crochet club, and special event programming.

At one of the ornament-making workshops, there were three generations of families in attendance. The programming offered the opportunity for grandparents, parents, and grandchildren to create together, making memories and connections.

URBAN LOCATION
Local population 215,604

LANGUAGES OF PATRONS
English, Spanish, Korean, Tagalog, Chinese

4 BRANCHES
in the San Bernardino Public Library System

MAKERSPACE STAFFING
1 full-timer (15% of time)
2 part-timers (65–70%)
1 part-timer (25%)
2 volunteers (100%)

POPULAR ACTIVITIES
Holiday gift-making workshops, like Valentine's Day or Mothers' Day, draw a large audience.

FAVORITE TOOLS
Both low and high tech are appreciated, from crochet to VR, paper crafts, and 3D printing.

Creation Station
Dream Design Create
San Bernardino Public Library
MAKERSPACE

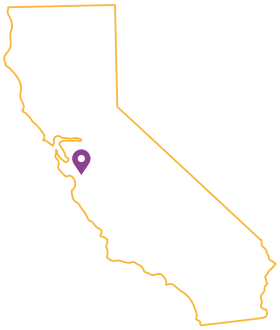
STAFF SUPERPOWER
Persistence from a passionate staff has helped this team make progress.

"Be sure to have a great elevator speech. Wherever you go, talk about what you're doing in the makerspace. You never know who might be interested or have something to contribute!"

GILROY, CALIFORNIA

GILROY LIBRARY

Providing a space with access to tools and resources that allows youth and adults to collaborate, innovate, and learn



The library delivers flexible programming for teens and adults in a multi-use space and also hosts the annual Gilroy Mini Maker Faire community event.

In 2019, the maker librarians, who had hosted "maker camps" and other hands-on programs in the past, organized a Gilroy Mini Maker Faire in the library and outdoor surrounding area. They were pleasantly surprised when 3,000 attendees came out. The 2020 Faire was slated to be even bigger but was canceled due to the COVID-19 pandemic.

When a local engineer was looking for opportunities in computer science for her daughter, she came across the nationwide organization Girls Who Code. She partnered with the library maker program and volunteered to lead the 15-week program twice.

RURAL/SUBURBAN LOCATION
Local population 58,756

LANGUAGES OF PATRONS
English, Spanish

7 BRANCHES
in Santa Clara County Library System

MAKERSPACE STAFFING
2 full-timers (10% of time)
2 volunteers for regular programs
45 volunteers for Mini Maker Faire

POPULAR ACTIVITIES
Paper crafts, vinyl and heat press creations, block printing, sewing, and coding are big draws.

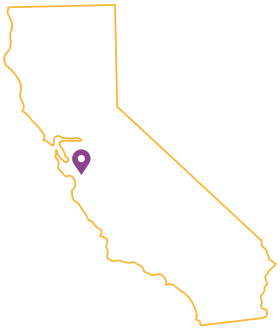
FAVORITE TOOLS
The Silhouette Cameo cutting machine is loved because it's so versatile.

STAFF SUPERPOWER
Outreach and partnership-building efforts have resulted in inspiring and collaborative community support for making.

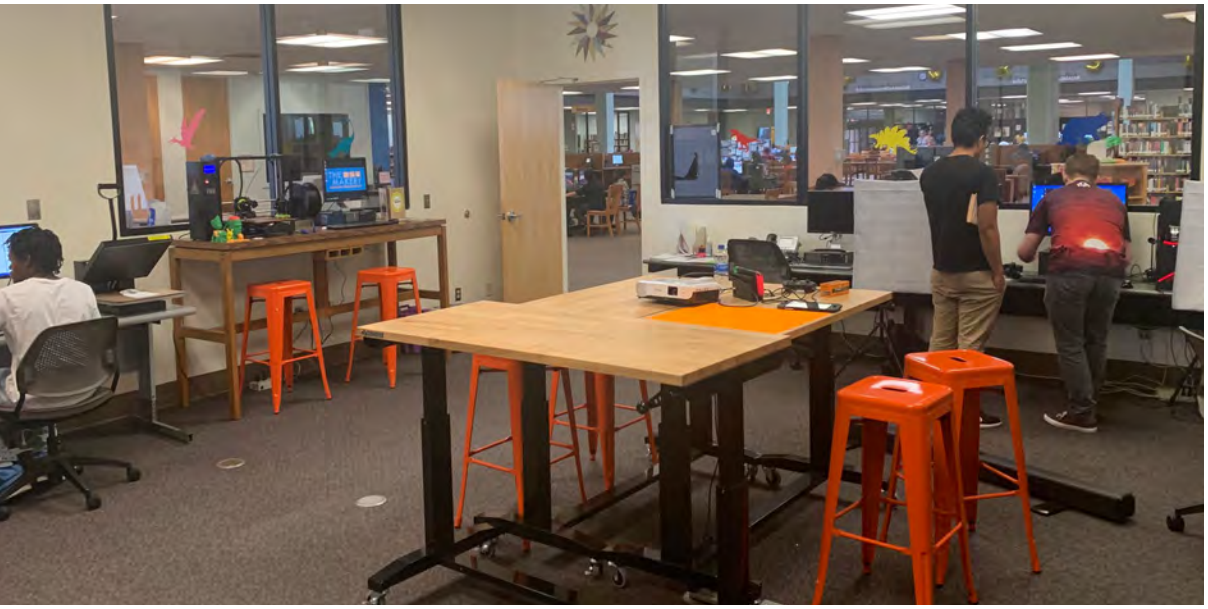
"Make sure you're constantly talking to your supervisor and/or administration so that everyone is on the same page as to what you're trying to do and accomplish!"

VALLEJO, CALIFORNIA

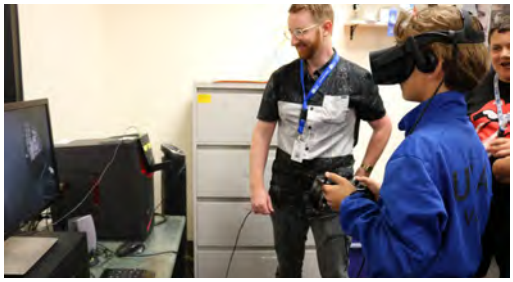
JOHN F. KENNEDY LIBRARY



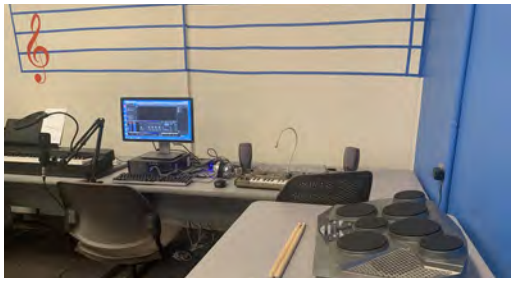
Providing a free space where adults and teens can access technology through structured and drop-in programs, learn, grow, and create with others



The Makery is an underused computer lab that has been converted into a dedicated technology space for teens and adults.



Popular technologies are showcased by positioning them right up front near the large windows of The Makery. Anyone walking by can see the 3D printer in action, and it's hard to miss the VR gamers, who attract attention and draw in curious patrons to the space.



Tools are set up along the perimeter of the room, and adjustable-height tables are positioned in the center of the rooms for collaboration. Vallejo's diverse community boasts an emerging art scene, so the Makery's sound-recording equipment and music-editing software are big draws for local musicians.

URBAN LOCATION
Local population 121,913

LANGUAGES OF PATRONS
English, Spanish, Tagalog

9 BRANCHES
in Solano County Library System

MAKERSPACE STAFFING
3 full-timers (10–30% of time)
1 part-timer (5% of time)
2 volunteers

POPULAR ACTIVITIES
Nintendo Switch gaming, sewing, 3D design, 3D printing, and sound recording are in demand.

FAVORITE TOOLS
The 3D printers, Oculus Rift VR, Silhouette vinyl cutter, and sewing machines are favorites.

THE MAKERY
WHERE SCIENCE, TECHNOLOGY & ART MEET

STAFF SUPERPOWER
The staff have both the vision to see the potential for an underutilized space and the strong teamwork to develop the space and program.

"Let the community be your guide! Equipment alone doesn't make a space successful. If your community is arts-focused, then pursue that focus."

HANFORD, CALIFORNIA

KINGS COUNTY LIBRARY

Providing an environment to build and foster a creative community

Maker Monday events encourage the community to engage in creative experiences and learn something new in a welcoming and playful environment.

RURAL LOCATION
Local population 56,910

LANGUAGES OF PATRONS
English, Spanish

7 BRANCHES
in Kings County Library System

MAKERSPACE STAFFING
4 full-timers

1 part-timer to staff each Maker Monday event

POPULAR ACTIVITIES
The 3D pens have become one of the most popular activities for kids on Maker Mondays.

FAVORITE TOOLS
The VR sets and 3D pens are top choices.

The Hanford Library hosts a Maker Monday event that offers a mix of hands-on activities, ranging from arts and crafts to high tech experiences, with tools like the 3D printer, a VR game system, Makey Makeys, and a vinyl cutter. The event draws all ages, especially families with young children.

The Kings County team designed maker carts for each of their seven branches, so that patrons at every location could enjoy the arts, crafts, and technology experiences of the maker program. Staff from across the county were invited to learn about the new tools at the Kings County Library before receiving their own maker carts.

STAFF SUPERPOWER
Staff is flexible and willing to learn and adapt from each experience.

"Take time to get to know your community and target audience. Be flexible with maker activities and be willing to adapt based on feedback."

LAKEPORT, CALIFORNIA

LAKEPORT LIBRARY

Providing welcoming spaces and opportunities for patrons of all ages to share, learn, and create

Clubs for teens and adults are hosted on a rotating monthly basis, plus there's a dedicated outdoor space for young children.

Every weekend, adults gather in Lakeport's multi-use makerspace to learn, socialize, practice skills, and share what they've been making at home. The monthly rotation includes Creative Club, Fabric Club, Yarn Wizards, and Makerspace Open Lab. Teen maker activities are featured on a regular basis, too.

The Kids' Patio offers a spot for exploration with water play, garden activities, and programs that relate to the science of air, water, earth, and light. A local artist painted a beautiful mural, and volunteers built the furnishings and painted the fence in rainbow colors.

RURAL LOCATION
Local population 4,986 (town) and 64,386 (county)

LANGUAGES OF PATRONS
English, Spanish

4 BRANCHES
in the Lake County Library System

MAKERSPACE STAFFING
2 full-timers (4 hours/month)
3 volunteers (3 hours/month)

POPULAR ACTIVITIES
Paper crafts, fiber arts, making with repurposed materials, water play, and garden exploration are big draws.

FAVORITE TOOLS
The sewing machines, Chromebooks, Cricut vinyl cutter, water table, planting bench, and solar toys are in demand.

STAFF SUPERPOWER
Make something out of nothing through camaraderie, sharing, embracing community, and openness to learning something new.

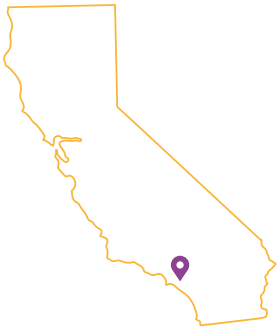
"Patience and persistence are essential! It took time for people to understand what we were building here, but then people helped and revealed such generosity, imagination, and enthusiasm."

ANAHEIM, CALIFORNIA

PONDEROSA JOINT-USE BRANCH

Building intergenerational engagement through STEAM

ANAHEIM PUBLIC LIBRARY



The Creativity Lab is an intergenerational community makerspace offering monthly themes for creative STEAM activities.

This small branch is a school library during the day and a public library after school and on weekends. The Creativity Lab provides a safe environment where families learn together. Their bilingual programs have included sewing, coding, 3D printing, and STEAM fairs, many offered in partnership with local organizations.

Bimonthly themes, like fiber arts, are very popular and offer self-directed opportunities for intergenerational making. One mother shared how happy she was that the library was offering sewing. She had learned to sew from her mother, and now this program is helping her share knowledge and bond with her daughters.

URBAN LOCATION
Local population 28,000 (town) near Los Angeles metropolitan area

LANGUAGES OF PATRONS
English, Spanish

8 BRANCHES
in Anaheim Public Library System

MAKERSPACE STAFFING
2 full-timers (30% of time)

3 part-timers (30% of time)

2–4 volunteers (80% of time)

POPULAR ACTIVITIES
Sewing and textile programs are the most popular because adults feel comfortable participating.

FAVORITE TOOLS
Sewing machines, needlework materials, and the button maker are most popular.

STAFF SUPERPOWER
The team mindset is focused on the kids in the community; they cultivate partnerships that help provide quality programs.

"Involve your community in developing your makerspace. What library staff and administration think the community needs might not be what they actually want or need."

Toolbox

Toolbox

LISTEN & DISCOVER

- Maker Ecosystem Map
- Physical Inventory Checklist
- Physical Space Assessment
- Program Inventory
- Focus Group Recruitment Scripts
- Focus Group Questions
- Focus Group Facilitation Script
- People and Purpose Tool

BRAINSTORM & PROTOTYPE

- Implementation Models At-A-Glance
- Field Trip Notes
- Prototype Framework
- Participant Feedback Form

IMPLEMENT

- Action Plan
- Budget Planner
- Maker Activity Plan

REFLECT & REFINE

- Logic Model
- Program Survey
- Maker Activity Log
- Patron Interview Questions
- Peer Observation

AMPLIFY & GROW

- Sample Donation Letter
- Elevator Pitch

MAKER ECOSYSTEM MAP

Use this mapping tool to visually arrange the people and organizations in your library's maker ecosystem.

STEP 1

Identify the specific names of people and organizations and place them alongside each ecosystem sector/colored circle on the map. If they fit into more than one sector, choose the one that is the closest fit.

STEP 2

Indicate which ones are already active partners with your library by marking the check box next to the name.

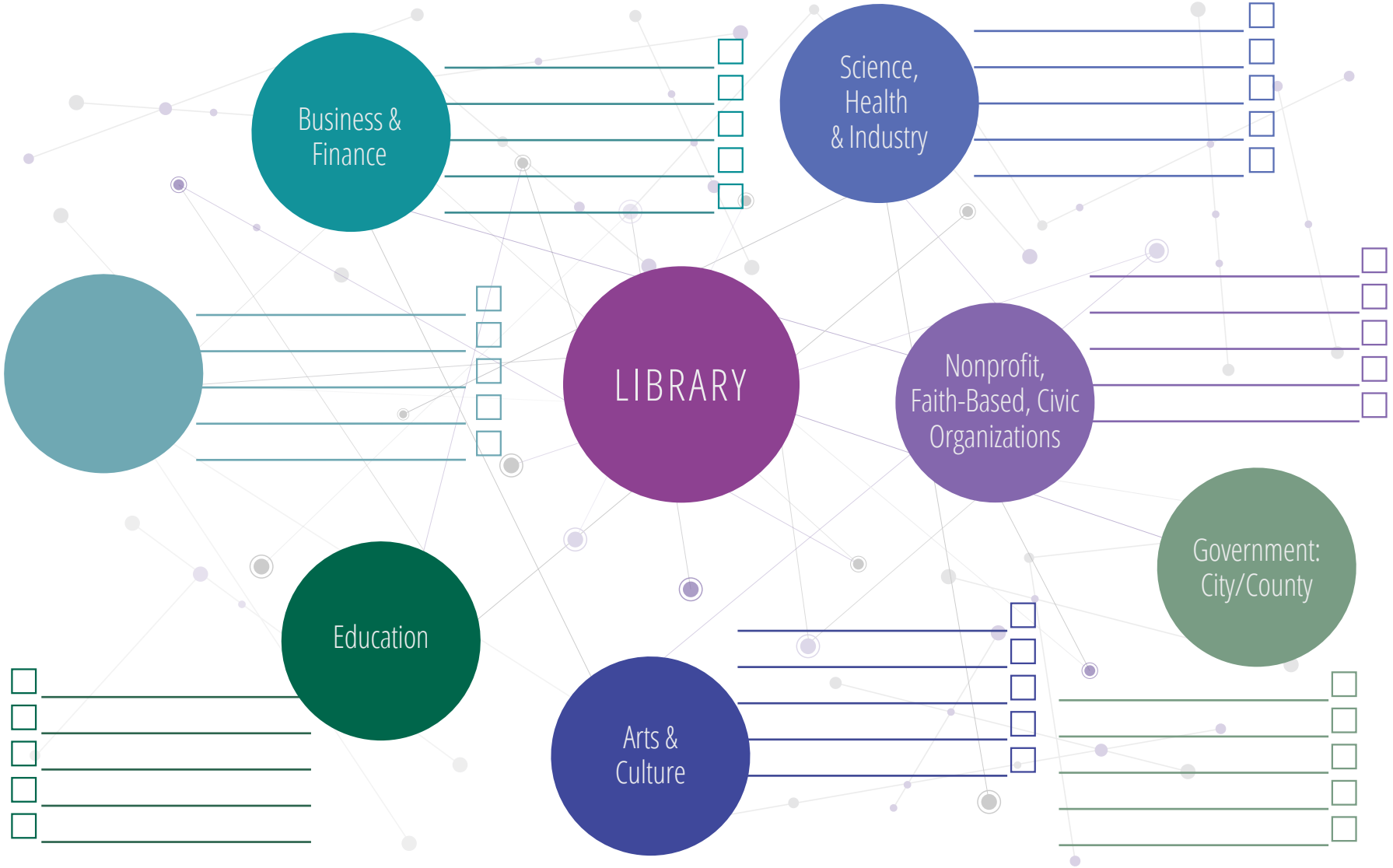
STEP 3

Think about your library's capacity and what new partnerships could be synergistic at this stage. Highlight the names of least two potential partners; you'll reach out to these first. Refer to **How to Make Connections and Develop Relationships** for more details.

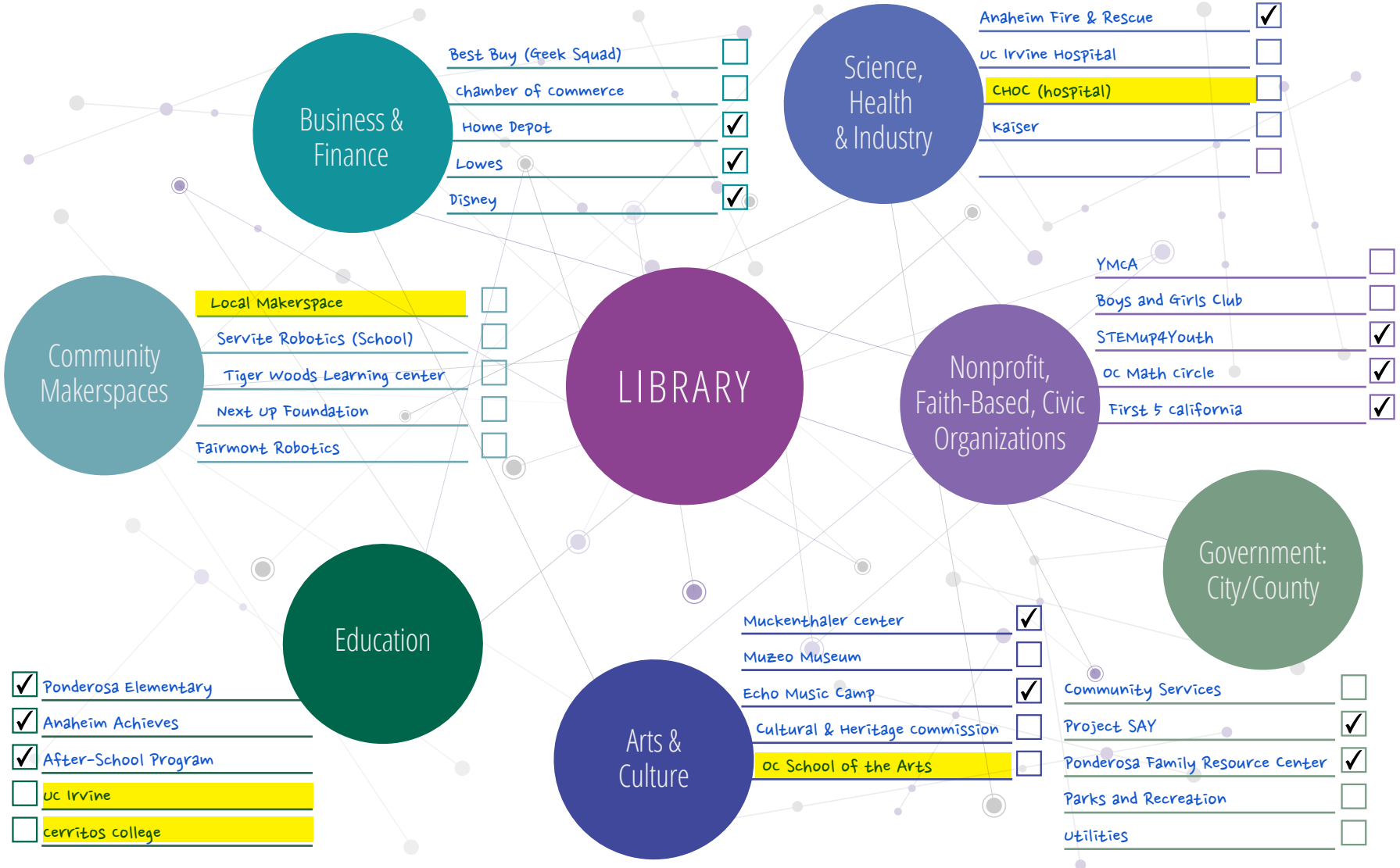
STEP 4

Record all of the people and organizations identified on a spreadsheet as well, including columns for the organization's name and URL, as well as the specific contact person's name, title, email, and phone number. Also include a column for notes.

MAKER ECOSYSTEM MAP CONTINUED



MAKER ECOSYSTEM MAP EXAMPLE



PHYSICAL INVENTORY CHECKLIST

Use this checklist to record the physical assets your library has available. Mark the quantity of each item in the box. If an item is in need of repair, add an "R" in the box. If an item is on your wishlist, add a "W" in the box.

CUTTING TOOLS

- [ ] Craft Knife
- [ ] Cutting Mat
- [ ] Die Cutter
- [ ] Fabric Scissors
- [ ] Pencil Sharpener
- [ ] Paper Cutter
- [ ] Scissors (adult)
- [ ] Scissors (children)
- [ ] Utility Shears
- [ ] _____
- [ ] _____
- [ ] _____

HAND TOOLS

- [ ] File/Rasp
- [ ] Hammer
- [ ] Pliers
- [ ] Precision Screwdrivers
- [ ] Rubber Mallet
- [ ] Screwdriver
- [ ] Wrench
- [ ] _____
- [ ] _____
- [ ] _____

JOINING TOOLS

- [ ] Bungee Cords
- [ ] Clamps
- [ ] Hot Glue Gun
- [ ] Staple Gun
- [ ] Vice
- [ ] _____
- [ ] _____
- [ ] _____

POWERED HAND TOOLS

- [ ] Drill
- [ ] Dremel
- [ ] Jigsaw
- [ ] Power Sander
- [ ] Power Screwdriver
- [ ] Router
- [ ] Zip Snip Cutter
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

MEASURING TOOLS

- [ ] Balance Scale
- [ ] Electronic Scale
- [ ] Measuring Tape
- [ ] Ruler
- [ ] Cloth Tape Measure
- [ ] Thermometer
- [ ] _____
- [ ] _____
- [ ] _____

SAFETY/MAINTENANCE

- [ ] Air Purifier
- [ ] Fire Extinguisher
- [ ] First Aid Kit
- [ ] Fire Blanket
- [ ] Safety Goggles
- [ ] Shop Vac
- [ ] Work Gloves
- [ ] _____
- [ ] _____
- [ ] _____

3D DESIGN AND FABRICATION

- [ ] 3D Pens
- [ ] 3D Printer
- [ ] 3D Scanner
- [ ] CNC Mill
- [ ] Digital Embroidery Machine
- [ ] Heat Press
- [ ] Laser Cutter/Engraver
- [ ] Vinyl Cutter
- [ ] _____
- [ ] _____
- [ ] _____

COMPUTERS

- [ ] Chromebook
- [ ] Desktop Computer
- [ ] Game/Graphics PC
- [ ] iPad/Tablet
- [ ] Laptop
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

2D PRINTERS AND SCANNERS

- [ ] 2D Scanner
- [ ] Inkjet Printer
- [ ] Large-Format Printer
- [ ] Laser Printer
- [ ] Photo Printer
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

PHYSICAL INVENTORY CHECKLIST CONTINUED

DIGITAL MEDIA PRODUCTION AND GAMING

- [ ] DSLR Camera
- [ ] Digital Piano
- [ ] Electronic Drum Set
- [ ] Game Console
- [ ] Green Screen
- [ ] Handheld Game System
- [ ] Headphones
- [ ] Lavalier Mic System
- [ ] Microphone
- [ ] Microphone Stand
- [ ] Projector
- [ ] Studio Speakers/Monitors
- [ ] Studio Lights
- [ ] Synthesizer
- [ ] Tripod
- [ ] TV Monitor
- [ ] VR System
- [ ] _____
- [ ] _____

ROBOTICS/TOYS/SPECIALTY

- [ ] Button Maker
- [ ] Dash and Dot
- [ ] Keva Planks
- [ ] Lego
- [ ] Makedo
- [ ] Makey Makey
- [ ] Ozobots
- [ ] Rigamajig
- [ ] Snap Circuits
- [ ] Squishy Circuits
- [ ] Strawbees
- [ ] _____
- [ ] _____
- [ ] _____

TOOLS FOR ELECTRONICS/ PHYSICAL COMPUTING

- [ ] Alligator Clips
- [ ] Arduino
- [ ] Battery Case
- [ ] Battery Tester
- [ ] Breadboard
- [ ] Extension Cords
- [ ] Micro:bit
- [ ] Motors
- [ ] Power Strip
- [ ] Raspberry Pi
- [ ] Soldering Iron
- [ ] Tweezers
- [ ] Third Hand
- [ ] Wire Cutter
- [ ] Wire Stripper
- [ ] _____
- [ ] _____
- [ ] _____

FIBER ARTS

- [ ] Crochet Hooks
- [ ] Embroidery Hoop
- [ ] Felting Kit
- [ ] Iron
- [ ] Ironing Board
- [ ] Knitting Needles
- [ ] Loom
- [ ] Rug Hook
- [ ] Seam Ripper
- [ ] Sewing Machine
- [ ] Sewing Needles
- [ ] Snap Setter
- [ ] _____
- [ ] _____
- [ ] _____

FINE ARTS

- [ ] Brayer
- [ ] Clay Tools
- [ ] Easel
- [ ] Kiln
- [ ] Light Table
- [ ] Linocut Carving Tools
- [ ] Paint Brushes
- [ ] Palette
- [ ] Pottery Wheel
- [ ] Screen Printing Frames
- [ ] Squeegee
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

FURNISHINGS/STORAGE

- [ ] Cabinets
- [ ] Chairs
- [ ] Drying Rack
- [ ] Lighting
- [ ] Media Cart
- [ ] Mobile Storage
- [ ] Mobile Workbench
- [ ] Screen
- [ ] Shelves
- [ ] Stools
- [ ] Storage Bins
- [ ] Tables
- [ ] 3D Printer Cart
- [ ] Utility Cart
- [ ] Whiteboard
- [ ] _____
- [ ] _____
- [ ] _____
- [ ] _____

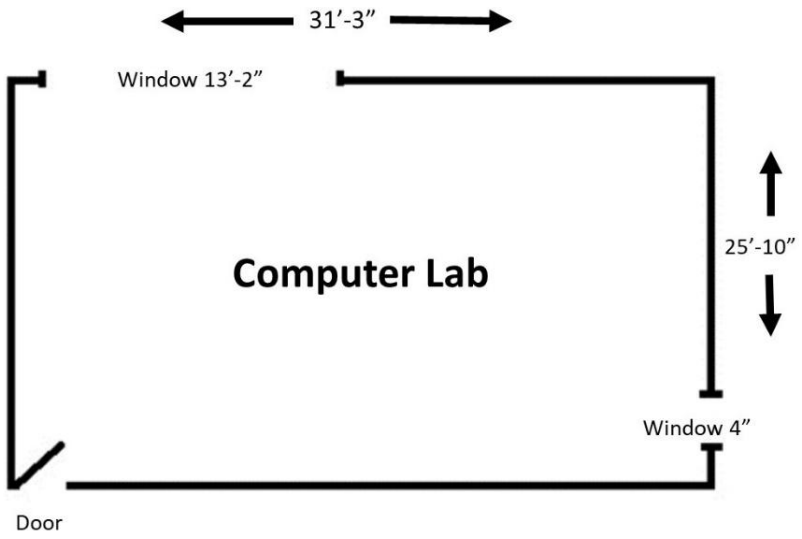
PHYSICAL SPACE ASSESSMENT

Use this sheet to map out details about the physical space you plan to use for your maker program. Don't forget storage spaces! This tool will help you keep track of what direction you're going and what aspects can be changed in the short term versus the long term.

Location Name	
Description Who uses the space? How accessible is it? Is furniture easy to move?	
Dimensions Include doorways, windows, heaters, etc. Drawing a sketch can be helpful here.	
What aspects are currently under your control (schedule, lighting, storage, etc.)?	
What aspects do you hope to be able to influence in the future (ventilation, furniture, etc.)?	
Attach a photo or insert a link.	

PHYSICAL SPACE ASSESSMENT EXAMPLE

Use this sheet to map out details about the physical space you plan to use for your maker program. Don't forget storage spaces! This tool will help you keep track of what direction you're going and what aspects can be changed in the short term versus the long term.

Location Name	computer Lab
Description Who uses the space? How accessible is it? Is furniture easy to move?	The computer lab has 9 desks and 18 desktop computers. Alterations would allow it to be used as multi-use space accommodating both computer lab and makerspace.
Dimensions Include doorways, windows, heaters, etc. Drawing a sketch can be helpful here.	
What aspects are currently under your control (schedule, lighting, storage, etc.)?	• Schedule – This space is for library programs only. We envision having regular Makerspace hours 2x per week (this could increase as volunteers are recruited and trained). • Storage – Existing storage cupboard is for library use only. Adding a locking option to the cupboard would make this more usable.
What aspects do you hope to be able to influence in the future (ventilation, furniture, etc.)?	• Removal of desktop computers to be replaced with laptop computers kept in a locked charging tower. • change desks to make the space more flexible. Possible purchase of 3 maker flex tables to use as both computer desks and makerspace tables. would allow for easy storage (foldable top) and flexibility in height. • Purchase of additional storage (another cupboard). • Purchase of butcher block, adjustable-height work tables for collaboration stations and group projects for the middle of the room. • Future room alterations: carpet removal, improved ventilation, and soundproofing.
Attach a photo or insert a link.	https://bit.ly/2Gcgwvu

PROGRAM INVENTORY

STEP 1

Save/print at least three months' worth of your library's program calendars for all departments.

STEP 2

Review the list of programs and consider which ones have elements that are aligned with the maker mindset or encourage participants to make (e.g., any hands-on, creative, arts, or science programs).

STEP 3

Log each program that has maker elements on this document with the categories provided. Do not repeat program entries (e.g., a weekly robotics program only needs to be entered once).

STEP 4

Review the inventory as a whole and reflect on the following questions:

- What surprised you about your programs when you did this activity?
- Was it hard to identify if a program was a "maker program"? Why or why not?
- What actions do you need to take if you want to adjust or include existing program(s) into your new makerspace initiative?

Program Name	Frequency	Audience	Coordinated by (department/ person)	Existing partners or sponsors	Does this program encourage a maker mindset or invite participants to make? Explain.

PROGRAM INVENTORY CONTINUED

Program Name	Frequency	Audience	Coordinated by (department/ person)	Existing partners or sponsors	Does this program encourage a maker mindset or invite participants to make? Explain.

FOCUS GROUP RECRUITMENT SCRIPTS

PHONE CALL INVITATION

(This script can be adapted for in-person conversation or announcement at a workshop or meeting.)

Customize the highlighted fields to fit your own library's situation.

"Hi, _____. This is _____ calling from _____. I hope that you're well.
PERSON'S NAME *YOUR NAME* *YOUR LIBRARY NAME*

"I'm calling because we're starting a new project, and we think your perspective could be really helpful as we begin to shape the program design.

"We're developing new creative programming for _____.
TEENS/ADULTS/CHILDREN/FAMILIES/ALL AGES
It's called a makerspace and focuses on programming that encourages hands-on learning. As a planning step, we're trying to identify the needs and interests of our library community. Because of your familiarity with _____,
THE PERSON'S RELATIONSHIP TO THE LIBRARY OR AREA OF EXPERTISE (EDUCATION, TECHNOLOGY, ART, SCIENCE, ETC.)
we think you have some insight that would be valuable to us.

"I'm wondering if you might be willing to join our focus group discussion. We're bringing together a small group of about 8 people to share thoughts and provide feedback as we design our new program. We plan to audio record the session so we can refer back to what was said. We'll serve light refreshments, and the atmosphere will be casual, friendly, and conversational. We would really appreciate it if you could join our focus group, which is scheduled to take place on _____ for 45 minutes. Do you think you would be willing to participate?"
DATE

If they say no, thank them for considering and end the conversation in a friendly way. If they say yes or maybe, answer questions they may have and share details of the sessions: date, time, place, childcare you're offering, incentives, etc. If the person agrees to participate, ask for their email so that you can send the details to them. If you're announcing at a meeting, circulate a clipboard for sign-ups, requesting their email address and phone number.

"We're so grateful that you would do this for your library, _____. Thank you, and I'll be in touch with an email soon."
PERSON'S NAME

FOCUS GROUP RECRUITMENT SCRIPTS CONTINUED

*(Be sure to send the follow-up **CONFIRMATION** and **REMINDER** emails. Sample scripts are shared on the following pages.)*

EMAIL INVITATION

SUBJECT LINE:
Invitation to Participate in Public Library Focus Group

BODY:

Dear _____,
NAME

The _____ is in the planning stages for a
YOUR LIBRARY NAME
new project, and we think your perspective could help us shape the program's design. We're developing a new type of creative programming called a makerspace that encourages hands-on learning. As a planning step, we're reaching out to _____ for help as we try to identify
TEENS/ADULTS/CHILDREN/FAMILIES/ALL AGES
needs and interests of our library community. Because of your familiarity with

_____,
THE PERSON'S RELATIONSHIP TO THE LIBRARY OR AREA OF EXPERTISE (EDUCATION, TECHNOLOGY, ART, SCIENCE, ETC.)
we want to hear from you and listen to your perspective.

I'm wondering if you might be willing to join our focus group discussion? It's a small group of about 8 people gathering to share thoughts and ideas and provide insight to help us design our new program. We plan to audio record the session so we can refer back to what was said. We'll serve light refreshments, and the atmosphere will be casual, friendly, and conversational. We would really appreciate it if you could join our discussion, which is scheduled to take place on _____ for 45 minutes. Do you think you
DATE
would be willing to participate? Please let us know by _____.
DEADLINE TO RESPOND

Sincerely,

_____
TITLE

FOCUS GROUP RECRUITMENT SCRIPTS CONTINUED

CONFIRMATION EMAIL

Dear (Name),

Thank you very much for agreeing to participate in the _____ focus group on _____.
YOUR LIBRARY NAME *DATE, TIME & LOCATION*

We truly appreciate your willingness to share your thoughts with us; your input will help us create new learning experiences and creative opportunities for local _____. We respect and value your time and that of other participants. We'll start right on time at _____ and we'll finish no later than _____. We'll meet at the library in _____. We'll serve light refreshments. The focus group discussion will be led by _____.
TEENS/PATRONS/CHILDREN/FAMILIES/OTHER *START TIME* *END TIME* *NAME THE ROOM AND DESCRIBE HOW TO FIND IT IN CASE IT ISN'T OBVIOUS* *DISCUSSION LEADER'S NAME*

If you have questions, please don't hesitate to email or call me at _____. If a last-minute emergency prevents you from attending, please call the information desk at _____ to let us know. Again, thank you for your generosity in agreeing to help your library. We'll see you on _____!
PHONE NUMBER *PHONE NUMBER* *DATE*

Sincerely,

_____
TITLE

REMINDER EMAIL

Resend the confirmation email a few days before the focus group as a reminder. You might update the subject line to read as follows:

SUBJECT LINE:

REMINDER: Library Focus Group on _____ at _____
DATE *TIME*

FOCUS GROUP QUESTIONS

SAMPLE QUESTIONS FOR STAFF

If participants are slow to respond to certain questions, use the examples in parenthesis to spark conversation.

- Name? Title? Responsibility?
- How long have you worked at this library?
- How would you describe what it means to be a maker?
- How would you describe what a makerspace is?
- Have you ever visited a makerspace? If yes, where was it? Have you ever participated in any maker activities? What were some impressions you came away with?
- Have you ever designed or participated in the design of a makerspace (in a library or other location)? If so, please describe.
- What would be the advantage of creating a makerspace for this library? For staff? For the community? What might be some disadvantages?
- What are some of your concerns about creating a makerspace? If the group is slow to respond, you can prompt them by giving examples such as: space, logistics, training, funding, etc.
- How does a makerspace help fulfill the mission of your library?
- Who would the primary users of the makerspace be? Can you describe them? When would these users most likely be using the space?
- What types of activities should the makerspace provide?
- Where should the makerspace be physically located?
- What type of staffing structure do you think needs to be in place (existing staff, volunteers, community members, etc.) for your makerspace to be successful?
- Describe what it might be like for a patron to experience a makerspace here at the library. How would they feel during the experience? What might they be inspired to do as a result?
- What type of training or professional development for staff/volunteers would support a successful makerspace?
- How do you think your job will be impacted by the development of a makerspace?
- How could a makerspace be integrated into existing library programs and services?
- What are any concerns or restrictions (fiscal, administrative, logistical, etc.)?
- Are there any local/community groups or organizations that might be helpful to partner with to achieve the goals of your makerspace? Who are they and why?
- What are some ways that the library might promote the makerspace to patrons and the broader community?
- What would constitute a successful makerspace?
- Any other comments/questions/concerns/needs?

FOCUS GROUP QUESTIONS CONTINUED

SAMPLE QUESTIONS FOR COMMUNITY PARTNERS

If participants are slow to respond to certain questions, use the examples in parenthesis to spark conversation.

- Name? Organization name? Role/responsibility?
- What type of organization (public, private, nonprofit, etc.)?
- How long has your organization been in operation? What is your organization's mission/function? Briefly describe your organization's strategic goals and their intended impact.
- Describe the types of outreach and/or education your organization does with the community.
- Have you previously collaborated on projects with the library? If yes, please describe. How long have you been a partner? If no, why not? What types of partnerships would you like to initiate with the library?
- If you've partnered with this library, please describe any methods you've used to help plan, set goals, and assess impact.
- How has the community benefited from your partnership with the library? How has your organization benefited? What do you consider to be the most valuable assets that the library has brought to the partnership?
- Are you familiar with making? Makerspaces? If so, please describe.
- Has your organization had any role in makerspace planning or implementation? If so, please explain how and where. What was the experience like? What lessons did you learn?
- What community segment (audiences) do you feel could most benefit from a library makerspace?
- Does your organization have information (data, anecdotal, etc.) that might help library staff better connect with community audiences regarding the makerspace project?
- If you were able to establish a partnership with the library in developing their makerspace, what could you contribute (planning, funding, training, staffing, equipment, etc.)? What would your organization need in return (funding, space, audience share, etc.)?
- Which individual(s) within your organization do you see facilitating or leading a partnership on this project?
- How might your organizations assess the success of the partnership with the library?
- What types of activities do you think should be included in a library makerspace?
- How would your organization define success for a library makerspace?
- What other community organizations or partnerships might be helpful for this project?

FOCUS GROUP QUESTIONS CONTINUED

SAMPLE QUESTIONS FOR PATRONS

If participants are slow to respond to certain questions, use the examples in parenthesis to spark conversation.

- Tell me a little about yourself: Name? Age? Job? Retired?
- How long have you been a resident of this community?
- What do you like to do in your spare time? What are your hobbies?
- If you could make anything, what would it be? What new skills are you excited to learn?
- In what ways do you consider yourself creative? What type of environments or spaces motivate you to be creative?
- Do you consider yourself an "expert" in any of your creative pursuits? If so, please explain.
- Are there any materials/tools that you don't have access to that you would like to use in a library setting?
- What type of technology training should libraries provide? What kind of technology tools should be available for patrons to use (3D printers, VR, sewing machines, etc.)?
- What are your main reasons for using the library? What services do you use? How do you learn about library services and events?
- How often do you come to the library? What would motivate you to come to the library more often? What days of the week and hours would be most convenient for you?
- What are the barriers that keep you from coming to the library more often?
- How would you describe what it means to be a maker?
- Can you describe what a makerspace is?
- Have you ever been to a makerspace? If yes, describe what you enjoyed. What didn't you enjoy?
- What would motivate you to come to the library and participate in a makerspace? What would make it a place that you/your family would enjoy visiting?
- Describe any needs in the community that you think a makerspace might help address.
- What are some features that you think a library makerspace should offer?
- What times do you think the makerspace should be accessible?
- Which of the following possible makerspace items interest you and why? (Show photos of sample tools, materials, and activities, like the ones on the following page.)
- What are some ways the library might provide maker activities outside of the library in the community?
- What might be some reasons for the library not to have a makerspace?
- Do you know of other makerspaces or maker groups (or creative learning environments) in your community? If yes, what can you tell us about them? Strengths and weaknesses? Elements you'd like to replicate?

Sample images showing a broad range of maker activities that could be shown to participants during a focus group.

FOCUS GROUP FACILITATION SCRIPT

Thank you very much for taking this time to speak with us today.

My name is _____ (*NAME*). I am the _____ (*TITLE*) at _____ (*LIBRARY NAME*).
The reason we're here today is to gather your opinions and attitudes about our library's makerspace. In order to design a makerspace that meets our communities' needs, it's important that we hear from our patrons, staff, and community members.

As a reminder, this focus group is voluntary, so you may choose to end your participation at any time without risk. We encourage you to answer each question as honestly as possible, as that will be most helpful. However, you may choose not to answer any question(s).

In order to assure accuracy, we would like to record audio of this session. Please note that your name and other personally identifying information will be removed from any notes, transcripts, or reports we write. Do we have your permission to record?

To allow our conversation to flow more freely and make the session run smoothly today, I'd like to go over some agreements.

1. Only one person should speak at a time. This is doubly important as our goal is to make a written transcript of our conversation today. It's difficult to capture everyone's experience and perspective on our audio recording if there are multiple voices at once.

2. Please avoid side conversations.

3. Everyone doesn't have to answer every single question, but I'd like to hear from each of you today as the discussion progresses.

4. There are no "wrong answers," just different opinions. Say what is true for you, even if you're the only one who feels that way. What is said in this room stays in this room.

If you need a break, the bathrooms are located _____ (*LOCATION*). Are there any questions?

Great, let's get started.

PEOPLE AND PURPOSE

Part 1: The Audience Statement

Complete the following fill-in-the-blank sentence—once for each of the audiences you're hoping to serve with your makerspace. Use additional copies of this tool as needed. Remember, this is an exercise to identify who has a need and the underlying belief about that need, but not how your program might help address it.

_____ need/want/have
WHO
_____ but/despite/because of
WHAT IS MISSING OR THE PROBLEM
_____.
UNDERLYING BELIEF ABOUT THE NEED

Part 2: The Environment Statement

What kind of attitudes and behavioral qualities do you hope to encourage and support in the maker environment you're designing? Consider choices from the list below. Feel free to add more words. Mark or highlight your top three words.

Thoughtful	Challenged	Curious	Self-directed
Inquisitive	Inspired	Fearless	Collaborative
Creative	Open-minded	Genuine	Organized
Caring	Safe	Adventurous	Reflective
Persistent	Respectful	Innovative	Focused
Dedicated	Hopeful	Celebratory	Joyful
Resourceful	Confident	Encouraged	
Excited	Empowered	Helpful	

Now, ask yourself how you might best support the qualities you starred above through the maker environment that you wish to create. Fill in the blanks in the sentence below.

This maker environment helps support people to be/feel _____
FEELING/DISPOSITION/QUALITY
because _____.
UNIQUE ASPECT ABOUT THE PROGRAM DESIGN OR ATMOSPHERE

Part 3: The Framing Question

Now it's time to take those two parts—the Audience Statement and the Environment Statement—and set up your Framing Question. You'll use this as the starting point for the next stage of your program development. Fill in the blanks below.

How might we design a maker program for _____ that addresses the need
WHO
_____
NEED OR PROBLEM
and fosters/cultivates _____?
FEELING/DISPOSITION/QUALITY

IMPLEMENTATION MODELS AT-A-GLANCE

MULTI-USE SPACE: A room or area of the library is quickly converted to serve as a temporary space for maker programming at a specific time. Tools and materials are stored in closets or on mobile carts that can be rolled into the program room when needed and then tucked away.

Benefits	Challenges
• Programs can be offered without a dedicated space, affording flexibility for libraries with limited space • Schedule can revolve around staff or volunteer availability, affording flexibility for libraries with limited staffing for maker programming • Doesn't need to be open all the time	• Scheduling around other programming • Time and effort to haul stuff in and out • Appropriate and accessible storage for times when the program isn't running • Program less visible when not running • Less time or opportunity for patrons to explore the equipment

DEDICATED SPACE: A room or area in the library (e.g., underutilized computer room) is either specifically designed for or converted into a permanent space for maker activities, tools, and materials.

Benefits	Challenges
• Designed to accommodate the needs of making activities and the storage of supplies (e.g., ventilation, electrical supply, sinks, secure equipment) • Readily available for staff training • Greater visibility in the library • More opportunities to offer an open studio or drop-in program	• Might require dedicated staff member • Higher cost to build and maintain • Could limit capacity for participants • Open studio or drop-in programming is challenging for staff to multitask between space management, customer service, and instruction support

OUTREACH AND MOBILE UNITS: Maker programming is offered outside the parameters of the library by bringing tools and materials to people in locations like schools, nursing homes, clubs, and more.

Benefits	Challenges
• Raises visibility of the library in the community and maker ecosystem • Able to reach and interact with audiences not usually at the library • Opportunity to change public perception of what libraries do • Enhances existing partnerships and helps build new ones	• Time and effort to haul stuff in and out • Might require a special vehicle • Activities must be engaging but relatively quick • Staff are off-site for the event and not available to work inside the library

AT-HOME PROGRAMS: Tools, materials, and/or instruction are offered to support makers who tinker at home at their own pace. This includes virtual programming broadcast via a meeting platform or on the internet. Tools and materials are sometimes checked out and other times freely distributed.

Benefits	Challenges
• Doesn't limit participation to a specific day and time • Library of Things program offers patrons more time and flexibility to make things with the tools over several days • Potential to reach people who can't attend a library program • With online tutorials, patrons can repeat the program as often as they wish • Patrons can go at their own pace	• Library of Things program requires ongoing administrative staff time for managing the collection • When loaning supplies, tools may be broken or pieces may be missing when returned to the library • May require specialized skills (e.g., for staff to produce video content or for patrons to use a tool independently) • Digital divide makes virtual programming inaccessible to some

COMMUNITY EVENTS: Gatherings where local makers and creatives bring projects to share and demonstrate, get inspiration from each other, or offer their services to the community. This includes repair fairs, where experts offer their services to fix a variety of broken items.

Benefits	Challenges
• Raises visibility of the library in the community and maker ecosystem • Offers ability to reach and interact with audiences not usually at the library • Showcases and celebrates community skills and creative abilities • Enhances existing partnerships and helps build new ones • Promoting repair helps cultivate a more sustainable approach to living	• May be time-consuming to organize if the library is the lead organizer • Logistical challenges (e.g. permits, space, electricity, W-iFi, weather) • Materials cost can be high for large-scale events • Time and effort to haul stuff in and out • Often requires recruiting lots of volunteers • Staff may be off-site for the event and not available to work inside the library

FIELD TRIP NOTES

Makerspace Name _____ Location _____

Contact Name _____ Email/Phone _____

Be sure to ask if you can take photos!

Great ideas I got from touring this makerspace:

Space What did you notice about the furniture, lighting, signage, storage, ventilation, etc.?	**Tools/Materials** How accessible are they to patrons? Is there any signage/waivers/guides? Are their assistive technologies available?
Programming What types of programs do they offer? How often? For what audiences? How are they received?	**Operations** Who staffs the space? How are they trained? What parterships are in place? How is it funded?

FIELD TRIP NOTES

What gets you excited after visiting this makerspace?

What are three things you learned that could apply to your library's makerspace?

PROTOTYPE FRAMEWORK

Which elements do you hope the prototype will help you understand more clearly? Check all that apply and/or add your own in the list.

Date(s) and time of prototype

Prototype description:

Reflection

What worked well?

What would you improve if you could do it again?

What did you notice/observe/hear from participants?

What do you want to test in your next prototype?

TIMING

- [ ] Day of the week
- [ ] Time of day
- [ ] Program length
- [ ]

VENUE

- [ ] On site in
- [ ] Off site at

TARGET AUDIENCE

- [ ]
- [ ]

MARKETING

- [ ] Flyers in library
- [ ] Social media
- [ ] Newspaper
- [ ]

STAFFING MODELS

- [ ] Volunteers
- [ ] Outside expert
- [ ]

DELIVERY METHOD

- [ ] Passive display
- [ ] Table at an event
- [ ] Stations of activities
- [ ] "Class" on a particular topic
- [ ] Virtual program
- [ ]

SPACE DESIGN

- [ ] Arrangement of furniture
- [ ] Mobile cart
- [ ] Accessibility
- [ ]

TYPE OF ACTIVITY

- [ ]
- [ ]
- [ ]

PARTICIPANT FEEDBACK FORM

Thank you for participating! Your feedback is valuable to us and will help shape future programs.

What did you like about this experience?

What would make this experience better?

How did you hear about it?

- ☐ Social media
- ☐ Flyer at the library
- ☐ Word of mouth
- ☐ Other:

How likely are you to attend another program like this offered by the library?

Not likely 1 2 3 4 5 6 7 *Very likely*

How likely are you to recommend this program to a friend?

Not likely 1 2 3 4 5 6 7 *Very likely*

Anything else you would like us to know?

Thank you for participating! Your feedback is valuable to us and will help shape future programs.

What did you like about this experience?

What would make this experience better?

How did you hear about it?

- ☐ Social media
- ☐ Flyer at the library
- ☐ Word of mouth
- ☐ Other:

How likely are you to attend another program like this offered by the library?

Not likely 1 2 3 4 5 6 7 Very likely

How likely are you to recommend this program to a friend?

Not likely 1 2 3 4 5 6 7 Very likely

Anything else you would like us to know?

ACTION PLAN

Download the **Excel workbook** to get started.

The Action Plan helps you schedule and assign the tasks needed to reach your SMART goals. Begin by listing each goal in the top section of the spreadsheet. Each goal is assigned a unique number in column A (G1, G2, G3, etc.) and the cell color indicates what category the goal relates to (partnerships, physical space, or programs). Pictured below is an example of an Action Plan sorted by due date.

The bottom section provides space to define each of the tasks needed to reach your goals, set deadlines, and assign the work to members of your team. The template provides five rows for each goal, but you can easily insert more rows as needed. You can then sort the spreadsheet to organize tasks chronologically by due date, assignment, or goal number to help manage your progress.

Action Plan Example

Color Key:	Partnerships Goals	Physical Space Goals	Program Goals	Cells are shaded to indicate what type of goal they relate to: Partnerships, Physical Space, Programs. Tasks can be sorted chronologically, by assignment, by goals, etc.

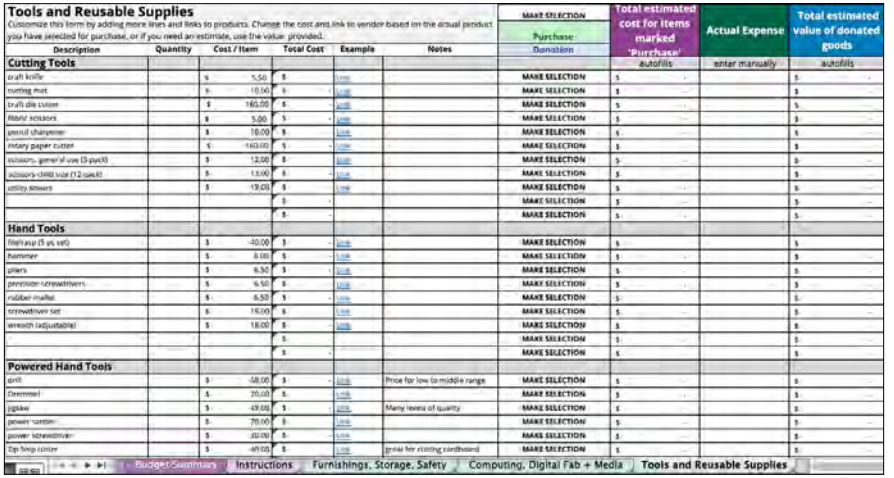
Goal Number	Goal Description
G1	Recruit at least 3 sponsors to contribute in-kind materials or donations for developing a space by Dec 2025.
G2	Recruit at least 3 community partners to lead instruction for singular learning opportunities by March 2025.
G3	Recruit at least 3 community partners to collaboratively develop workshops by August 31, 2024.
G4	Formally present and request Makerspace plans to Friends Board, including the need for their storage area, by October 2024.
G5	Prototype a maker cart and name to be used in Hangout by January 2025.
G6	Obtain a formal quote for the construction of the new Makerspaces by Feb 2025.
G7	Synthesize prototyping data to present to Programming and Outreach staff in December 2024.
G8	Develop and facilitate at least 2 prototype programs a month, 1 being for staff, by March 2025.
G9	Host the soft opening for physical maker space during National Library Week, April 2025.

GOAL	Task	Due Date	Assigned to:	Approved by:	Completed	Notes
G1	Request program proposal at October Friends Board meeting	9/11/2024	Dani	Kathy Wright	X	
G1	Customize in-kind/donation sponsorship letter for Makerspace project.	10/1/2024	Dani	Abbie	X	
G1	Create complete needs request to present to Friends.	10/1/2024	Dani & Martin	Abbie	X	This will be included in the Physical Space Goal 1 tasks.
G4	Develop Programming Proposal using P/O template, including Partnerships Goal 1.	10/9/2024	Dani	Abbie	X	
G7	Review Needs Assessment results with staff	10/25/2024	Martin V	Dani PG	X	
G7	Include presentation on P/O evaluations meeting agenda	11/16/2024	Dani PG	Abigail S	X	
G4	Create floorplan for converting the existing Arts/Graphics room to first iteration.	11/30/2024	Martin	Dani	X	
G7	Review prototype reports and identify common themes, conclusions, or areas of concern	11/30/2024	Martin V	Dani PG	X	
G6	Find consistent method of obtaining feedback from each prototype	11/30/2024	Dani PG	Abigail S	X	
G2	Schedule a meeting with Yolanda Bernal at First Five Riverside.	12/4/2024	Dani	Abbie	X	
G6	Work with facilities to schedule quote	12/7/2024	Dani & Abbie	Kathy B.	X	
G7	Combine insights gained through prototyping into a single report to be presented to P/O staff	12/11/2024	Martin V	Dani PG	X	
G8	Include P/O staff input in new prototype designs	12/11/2024	Martin V	Dani PG	X	
G5	Gather supplies and cart for partitioning of "Making Moves" Cart.	12/14/2024	Martin & Abril	Dani	X	Potentially purchase a new cart.
G5	Design the appearance of the "Making Moves" Cart.	12/14/2024	Martin & Abril	Dani	x	
G9	Finalize design for existing space in Arts + Graphics room	1/31/2025	Martin V	Abigail S	x	
G9	Collaborate with Friends of the Library to relocate their storage area	1/31/2025	Dani PG	Abigail S	x	
G2	Schedule a meeting with Dominick Venette at The Leela Project.	2/18/2025	Dani	Abigail S	x	
G8	Develop flyers and marketing material for each prototype	3/29/2025	Kristina	Dani PG	x	
G8	Design prototype activities as standalone events at our library	3/29/2025	Martin & Kristina	Dani PG	x	
G8	Reserve the correct spaces for each standalone prototype activity on Activenet	3/31/2025	Dani & Kristina	Michele L	x	
G3	Schedule a meeting with Neha Arya at FutureLink.	4/1/2025	Dani	Dani	x	Evaluation of Fall/Winter sessions & summer proposal.
G9	Purchase light refreshments to be served at the opening event	4/12/2025	Dani PG	Katherine B	x	
G9	Create method of inventory management and supply	5/31/2025	Martin & Kristina	Dani PG	x	

BUDGET PLANNER

The Budget Planner Tool helps estimate the cost of your makerspace program. Whether you have start-up funds or not, this tool can serve as your planning wishlist to help you project costs and set goals for fundraising. Download the **Excel workbook** to get started.

Each sheet in this Excel workbook has been pre-populated with lists of tools, furnishings, and materials often found in a library makerspace, with columns to total the estimated purchase costs and estimated value of donated materials. For each item, you can mark them as either for "Purchase" or "Donation".



Tools and Reusable Supplies

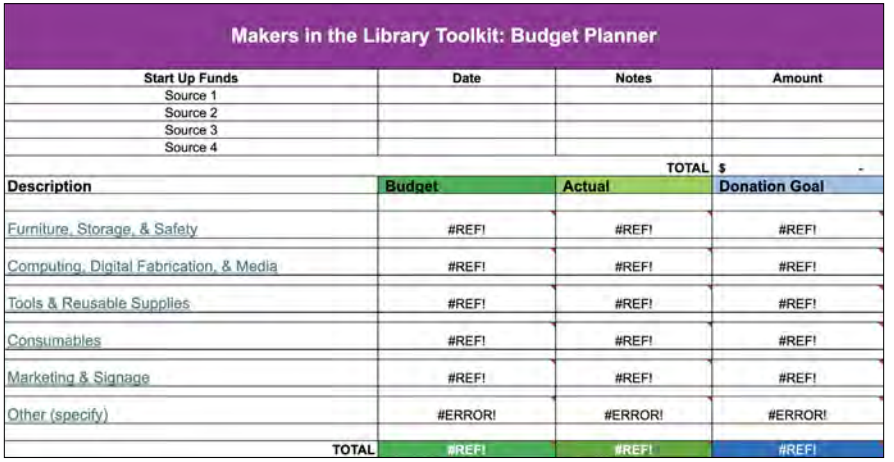
Customize this form by adding more lines and links to products. Change the cost and link to vendor based on the actual product you have selected for purchase, or if you need an estimate, use the value provided.

Description	Quantity	Cost / Item	Total Cost	Example	Notes	MAKE SELECTION (Purchase / Donation)	Total estimated cost for items marked 'Purchase'	Actual Expense	Total estimated value of donated goods
							autofills	enter manually	autofills
Cutting Tools									
craft knife		$ 5.50	$ -	Link		MAKE SELECTION	$ -		$ -
cutting mat		$ 10.00	$ -	Link		MAKE SELECTION	$ -		$ -
craft die cutter		$ 160.00	$ -	Link		MAKE SELECTION	$ -		$ -
fabric scissors		$ 5.00	$ -	Link		MAKE SELECTION	$ -		$ -
pencil sharpener		$ 10.00	$ -	Link		MAKE SELECTION	$ -		$ -
rotary paper cutter		$ 100.00	$ -	Link		MAKE SELECTION	$ -		$ -
scissors, general use (5-pack)		$ 12.00	$ -	Link		MAKE SELECTION	$ -		$ -
scissors, child size (12-pack)		$ 13.00	$ -	Link		MAKE SELECTION	$ -		$ -
utility scissors		$ 19.00	$ -	Link		MAKE SELECTION	$ -		$ -
			$ -			MAKE SELECTION	$ -		$ -
			$ -			MAKE SELECTION	$ -		$ -
Hand Tools									
file/rasp (5 pc set)		$ 40.00	$ -	Link		MAKE SELECTION	$ -		$ -
hammer		$ 8.00	$ -	Link		MAKE SELECTION	$ -		$ -
pliers		$ 8.50	$ -	Link		MAKE SELECTION	$ -		$ -
precision screwdrivers		$ 6.50	$ -	Link		MAKE SELECTION	$ -		$ -
rubber mallet		$ 6.50	$ -	Link		MAKE SELECTION	$ -		$ -
screwdriver set		$ 16.00	$ -	Link		MAKE SELECTION	$ -		$ -
wrench (adjustable)		$ 18.00	$ -	Link		MAKE SELECTION	$ -		$ -
			$ -			MAKE SELECTION	$ -		$ -
			$ -			MAKE SELECTION	$ -		$ -
Powered Hand Tools									
drill		$ 58.00	$ -	Link	Price for low to middle range	MAKE SELECTION	$ -		$ -
Dremmel		$ 70.00	$ -	Link		MAKE SELECTION	$ -		$ -
jigsaw		$ 49.00	$ -	Link	Many levels of quality	MAKE SELECTION	$ -		$ -
power sander		$ 70.00	$ -	Link		MAKE SELECTION	$ -		$ -
power screwdriver		$ 30.00	$ -	Link		MAKE SELECTION	$ -		$ -
Zip snip cutter		$ 49.00	$ -	Link	great for cutting cardboard	MAKE SELECTION	$ -		$ -

Budget Summary | Instructions | Furnishings, Storage, Safety | Computing, Digital Fab + Media | Tools and Reusable Supplies

The Budget Summary (first workbook tab) pulls together the totals from each of the sheets. This summary page can be used as documentation when applying for grants and meeting with potential donors and partners. Demonstrating both the costs of your program as well as the value of the donations you are raising will be important in your discussions.

Step-by-step instructions for how to use this tool are included on the second tab of the Excel workbook.



Makers in the Library Toolkit: Budget Planner

Start Up Funds	Date	Notes	Amount
Source 1			
Source 2			
Source 3			
Source 4			
		TOTAL	$ -

Description	Budget	Actual	Donation Goal
Furniture, Storage, & Safety	#REF!	#REF!	#REF!
Computing, Digital Fabrication, & Media	#REF!	#REF!	#REF!
Tools & Reusable Supplies	#REF!	#REF!	#REF!
Consumables	#REF!	#REF!	#REF!
Marketing & Signage	#REF!	#REF!	#REF!
Other (specify)	#ERROR!	#ERROR!	#ERROR!
TOTAL	#REF!	#REF!	#REF!

MAKER ACTIVITY PLAN

Project title

Recommended age group

Time needed/duration

Activity goal(s) or learning outcome(s)

Tools and materials

Activity instructions (or cite original source and modifications)

Ideas to simplify or extend the activity

MAKER ACTIVITY PLAN EXAMPLE

Project title Personalized Etched Glassware

Recommended age group Tween-adult. Note: Etching cream is for age 18 and over and should only be handled by staff with gloves and eye protection.

Time needed/duration
If stencils are pre-cut: 15-20 min. If participants design and cut their own stencils: 1 hour

Activity goal(s) or learning outcome(s)

- Participants will learn how to create a digital design on the Cricut/Silhouette (unless done in advance).
- Participants will explore negative and positive space in a design.
- Participants will experience the creative design process.

Tools and materials

- Glassware (non-Pyrex drinking glasses, jars, vases, etc.): one per participant
- Glass cleaner
- Paper towels
- Blue tape or masking tape
- Stencil vinyl
- Stencil transfer tape (optional)
- Popsicle sticks
- Table covering (e.g., newspaper)
- Etching cream
- Latex gloves
- Eye protection
- Cricut/Silhouette machine & mat
- Weeding tool or tweezers (to remove vinyl cutout)
- Sink area for rinsing

Activity instructions (or cite original source and modifications)

Silhouette's tutorial, including how to create the custom design.

Video on how to apply the stencil and cream.

1. Participants select their glass item, and then clean it with the glass cleaner and paper towels.
2. Participants digitally design and cut or select from an assortment of precut stencils to make their design. Stencil designs with simple outlines (no intricate shapes) can be applied by hand directly like a sticker. If a design is more complex (has interior shapes), use transfer tape.
3. Once design is placed where they like it, have participants rub with the popsicle stick to eliminate any air bubbles. Remove the transfer tape if used.
4. Place blue tape along all the edges of the stencil to make sure there is no exposed glass that could accidentally get etching cream on it.
5. Participants should now give their glass to a library staff member for etching.
   - The staff member needs to wear safety goggles and gloves.
   - Dab the etching cream on the glass stencil area in a thick layer.
   - After 60 seconds, wash off in the sink, being careful not to get cream on part of the glass that should stay clear.
6. Give the participant back their glass. They can now remove the sticker and dry it.

Ideas to simplify or extend the activity

- Use stencils with paint instead of etching cream for younger children.
- Work on the vinyl design portion of the activity and bring in more complex art.

LOGIC MODEL

This glossary provides definitions of commonly used terms for creating a logic model.

RESOURCES include human, financial, organizational, physical space, infrastructure, and community resources that are available to the project. This might include: staff, patrons, volunteers, funding, community partnerships, Friends of the Library, tools, and materials.

ACTIVITIES are the specific actions that are undertaken to achieve goals and make progress toward the outcomes. Activities might include: training staff, developing funding proposals, creating marketing materials, developing community partnerships, identifying space for programming, recruiting volunteers, and developing policies.

OUTPUTS are the direct products of program activities usually described in terms of the size and/or scope of services and products that are delivered or produced (e.g., number of classes taught, participation rates). Outputs might include: a training manual for staff on the 3D printer, two versions of patron surveys in English and Spanish, 75% repeat attendance at a weekly teen program, established monthly meetings with a local art organization representative, and quarterly artist programs led by volunteers.

OUTCOMES are the impacts or specific intended results of the program, and they demonstrate movement toward directly addressing (or reversing) the stated need or issue described in the Framing Question.

SHORT-TERM OUTCOMES happen early in the process (timeframe of 1–2 years) and typically describe specific changes in knowledge, skills, and awareness. Short-term outcomes act as catalysts for long-term outcomes. For example:

- Staff are trained and engaged with maker activities.
- The community has a greater awareness of library maker programs.
- The library is seen as a collaborative learning environment.
- Teens are more involved in library programs.

LONG-TERM OUTCOMES happen in the later stages of your program (timeframe of 3–5 years) and typically impact behaviors, practices, and policies. For example:

- The makerspace becomes a self-sustaining and integral part of library services.
- Patrons advocate for the library makerspace.
- The makerspace becomes a line item in the library budget.
- The reach of the makerspace is extended to branch libraries.

LOGIC MODEL CONTINUED

FRAMING QUESTION

RESOURCES	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	LONG-TERM OUTCOMES

LOGIC MODEL EXAMPLE

FRAMING QUESTION How might we design a maker program for teens that addresses the need for a safe, positive, enriching recreational and social space and fosters collaboration, innovation, and learning?
How might we design a maker program for adults that addresses the need for free education and training and fosters the development of community and new personal and professional skills?

RESOURCES	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	LONG-TERM OUTCOMES
	conduct evaluation	completed needs assessment	Teens more involved in library programs	Making is seen as an essential library service
Money	Space identification	Ideal space selected		
Time	Select furniture and storage	IT department has relocated items		
Space	Purchase new technologies	Grant funds expended to purchase appropriate tools for maker activities	community excited to have access to tools	
Tools and equipment	Seek alternative funding	Funding available to enhance and expand collective live programming		Makerspace has ongoing funding allowing for both growth and sustainability
Staff	Recruit and train volunteers	Schedule volunteers for maker programs		
Makers	Pilot maker activities and tools	Assign skilled staff for maker activities	Makers feel connected	
volunteers		Laser cutting, vinyl design, 3D printing programs offered		
Library administration	Maintain and establish new partners	Best Buy engaged as a partner	Library seen as a valuable partner for the community	Members use their membership to create partnerships, diversify their networks, and increase their lifelong skills
Marketing department		Meet with chamber of commerce		
Patrons		Invite core members into the collective		
Interns		Develop maker programs and or meet with CMAP TV, Gavilan college, Gilroy Unified School District		
Local schools and academia	Meet with local education and nonprofit stakeholders	New partners involved in maker activities	Greater awareness of library and library programs for community partners and businesses	Local business engaged as active community partners
Local private business		Initiate adult and minority waivers, processes for programs, and open hours		
Information technology	Develop policies, waiver processes	Identify appropriate pedadogy, skills, and practices	Makerspace is seen as a safe environment	
Local nonprofits	Develop best practices	Staff participate in CLA, NOMCON, STEAM Symposium, Maker Faire, Adobe Illustrator class		Access to maker programs and tools inspires career opportunities and skills
	Provide professional development for staff		Staff enthusiastic and involved in makerspace	

PROGRAM SURVEY

Thank you for taking the time to fill out this survey. Your responses will help us to improve the quality and activities of our library makerspace.

1. What is your age group?

- ☐ Under 18
- ☐ 18–24
- ☐ 25–39
- ☐ 40–59
- ☐ 60 or over

2. What is your zip code?

3. How often do you frequent the library?

- ☐ Every day
- ☐ Once a week
- ☐ A few times a week
- ☐ Once a month
- ☐ A few times a year
- ☐ This is my first time
- ☐ Don't know

4. How often have you visited the library's makerspace?

- ☐ 10 or more times
- ☐ 5 – 9 times
- ☐ 1 – 4 times
- ☐ This is my first time

5. What other activities would you like to see in the library makerspace?

6. Please indicate how you heard about the makerspace and/or this activity:

- ☐ Library website
- ☐ Newsletter
- ☐ Flyer or poster at library
- ☐ Social media
- ☐ Word-of-mouth
- ☐ Through another organization
- ☐ Other

PROGRAM SURVEY CONTINUED

7. Please indicate the degree you agree or disagree with the following statements about your participation in the library makerspace.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not applicable
I developed new skills.	☐	☐	☐	☐	☐	☐
I left with new ideas and interests.	☐	☐	☐	☐	☐	☐
I made connections with different types of people.	☐	☐	☐	☐	☐	☐
The makerspace helped me with my professional skill set or courses at school.	☐	☐	☐	☐	☐	☐
I experienced the makerspace as an enjoyable and safe space.	☐	☐	☐	☐	☐	☐
I'm more inclined to come to the library because of the makerspace.	☐	☐	☐	☐	☐	☐

8. How could the makerspace be improved? .

9. Do you have any additional comments?

MAKER ACTIVITY LOG

Day Date Weather

Program Name

Program Start Time End Time

Program Location

Name of Lead Facilitator

Facilitator contact info, if a guest speaker

Other helpers: *Staff*

Volunteers

Attendance: *Adults* *Teens 13+* *Children*

What went well? (facilitation, content, setup, materials)

How do you know? (How long did they stay? Did they ask questions? What was the mood in the room? Did they ask about returning for more programs?)

What would you do differently next time?

MAKER ACTIVITY LOG EXAMPLE

Day Tuesday Date 9-10-2024 Weather Evening, in the mid 80s

Program Name Virtual Tuesday

Program Start Time 6:00 PM End Time 7:45 PM

Program Location Teen Zone — 1st Floor of Feldheym Library

Name of Lead Facilitator Tammi Devine

Facilitator contact info, if a guest speaker

Other helpers: *Staff* Daniela Deleon

Volunteers N/A

Attendance: *Adults* 2 *Teens 13+* 2 *Children* 2

What went well? (facilitation, content, set-up, materials)

The space is easy to set up. Plenty of room for the participants to use the VR and have others watch them. We had time-slot sign-in sheets for each of our VR units, a publicity release, and a list of our games for them to choose what they wanted to play. There was also an end-of-event survey for each participant.

How do you know? (How long did they stay? Did they ask questions? What was the mood in the room? What comments did you hear patrons share about their experience?)

(1 FAMILY AND 1 SOLO TEAM) 45 Minutes to 1 hour

The family asked questions about the different types of games we have, how often we would be doing this, and why younger kids can't participate. They convinced the dad to try the roller coaster ride. It seemed as though they all had fun, except for the 8-year-old, who was very unhappy about not being allowed to play. The solo team used the Oculus Go and played three games.

What would you do differently next time?

We need to find ways to get the word out to people — using social media and library flyers is just not working! The change of library hours is still something new, and it's dark here at that hour. Getting people to come to this area after dark is hard. There is also the problem of the age limitation. We will be researching lowering the age for the next month's session.

PATRON INTERVIEW QUESTIONS

Use the following list of questions if you have 30 minutes or more to interview a patron. If you only have 10–15 minutes, try just the questions marked with a check mark. Feel free to mix, match, and add your own!

Introductory Questions

- ✓ Tell me a little about yourself. (Name? Age? Job? Retired?)
- How long have you been a resident of this community? (Where were you before that?)
- How often do you come to the library?
- What are your main reasons for using the library? (What services do you use? How do you learn about library services and events?)

Activity Questions

- ✓ How did you learn about the makerspace?
- What motivated you to participate in this activity?
- Have you ever done this activity before? Is this your first time making _____? (If not, where did you do this before? Tell me more.)
- ✓ What were some positive takeaways from your experience in the makerspace? (Did anything excite you about what we did today? Is there anything you would like to do more of as a result?)
- ✓ How could the experience/activity have been improved? (Level of difficulty? Materials? Physical setup? Timing?)
- ✓ What other activities (low-tech, high-tech, arts, science) should the library consider?

Access and Impact Questions

- What impact has the programming had on you? (Has participating helped you in any way outside of the library?)
- ✓ What would make it easier for you to participate in more programs like this? (Time of day? Transportation? Physical setup?)
- Would you recommend makerspace/maker activities to a friend or colleague?
- Do you know of other people or organizations that might be interested in partnering or working with this program? If yes, what can you tell me about them?

PEER OBSERVATION

Use this form to record observations and potential program enhancements. Then, take time to meet and reflect on what you noted. If possible, arrange a reciprocal visit!

Date

Time

My Name

Peer Name

Program Name

Location

Environment

- **Entrance**: Is the space visible? Is it clear where patrons need to go? Does it feel inviting?
- **Furnishings**: How is furniture and seating arranged? Is it adaptable to different ages and special needs?
- **Signage**: What type of signage is visible in the program area and the library itself?
- **Assistive technology**: Are there tools like screen magnifiers or noise-canceling headphones readily available for patrons?
- **Flow**: Can participants move about within the space? Can they access materials easily?
- **Storage**: How/where are program materials stored? Is there a place for works in progress?
- **Ambience**: What is on the walls, shelves, and tables? Is there music playing or a "buzz" in the room?
- **Safety**: Are there any safety requirements posted or announced verbally?

I noticed:

I wonder:

PEER OBSERVATION CONTINUED

Activity

- **Audience**: Who is the program designed for? Did they show up? Were incentives provided?
- **Length**: How long was the program intended for? How long did people stay?
- **Adaptability**: Can the activity be modified for varied skill levels or ages?
- **Collaboration**: Are patrons working together or individually? Are they asking one another questions?
- **Structure**: Is the activity open-ended? Did it focus on the process or creation of a product? Are several activities going on at the same time?
- **Tools/materials**: Are tools/materials easy to access? Are they age-appropriate? Are there any constraints? Can patrons take things home?
- **Prep**: What advance preparation was needed?

I noticed:

I wonder:

Facilitation

- **Getting started**: How do participants get started or invited to make?
- **Staffing**: What is the staff-to-participant ratio? How many staff/interns/volunteers are needed?
- **Questions**: Is the facilitator actively engaged with patrons or only available when asked? What types of questions are they asking the patrons?
- **Getting stuck**: If someone needs help or is confused, what happens?
- **Rapport**: What is the relationship between facilitator and patrons (e.g., relaxed, friendly, frantic)?
- **Finishing early**: If someone finishes early, are there other ways they can engage?
- **Continued learning**: Does the facilitator suggest ideas to extend the learning (e.g., books, websites, other programs)?

I noticed:

I wonder:

PEER OBSERVATION CONTINUED

Reflection Notes

SAMPLE DONATION LETTER

The annual DIY Maker Event is presented by XYZ Library each week from June 11 through August 4. The program is designed to encourage children, teens, and adults to engage in creative problem solving by taking on new maker challenges each week. Community members of all ages will get to be creators, not just consumers of the world around them, while discovering new interests and passions. Your support will help families build lifelong learning skills.

We know that:

- Summer learning loss is cumulative. Over time, the effect of "summer slide" can create a gap of 2–5 years by the time students reach high school.
- Making and creating with your hands empowers critical thinking skills. And the maker challenges provided expose children to new ideas and potential career pathways.
- Creating together helps families to strengthen relationships. It gives everyone something to be proud of that they made together and discuss at dinner time.

The DIY Maker Event promises to make learning fun for everyone, so participants will want to engage with us the entire summer. Last summer, over 3,000 people enrolled and over 6,000 attended in-person programs offered by the library.

You can assist in the following ways:

1. Monetary Donation — All contributions will help purchase supplies and support the DIY Maker Event as well as other maker programs throughout the year. Suggested donation is $50–$500. (Cash donations of $500 or more will receive advertising throughout the summer on the public information screens.)
2. In-Kind Donation — Do you have a product or professional service that can fill our need? Let us know! We could use short-term help this summer from a graphic designer and a photographer/videographer. If you have other specific items to contribute for program supplies or giveaways, we would love to learn more.

We will acknowledge all contributors in the Summer Brochure, Library XYZ's website, and on social media. Please fill out the enclosed donation form and return by April 30. Thank you for sending contributions by May 31.

We appreciate your consideration and interest. With your support, children, teens, and adults will create all summer. Feel free to contact me at (111) 222-3333 or librarian@XYZlibray.org if you have any questions.

ELEVATOR PITCH

Put your ideas into a framework by filling in the blanks.

Did you know/have you heard _____?
DESCRIBE THE NEED OR PROBLEM

My name is _____ from _____.
YOUR NAME/TITLE *LIBRARY NAME/LOCATION*

I'm helping develop _____
THE WHAT

for _____
YOUR SPECIFIC AUDIENCE

We will _____
THE UNIQUE APPROACH TO MEETING THIS NEED, OR THE HOW

so that _____.
THE OUTCOME YOU'RE STIVING FOR

For example:

Did you know the Lakeport Senior Center no longer has art or craft classes? The high schools no longer teach cooking and sewing. And there are very little activities for preschoolers. My name is Amy, and I'm a staff member of the library. Now our library can help fill those gaps for adult, seniors, teens, and preschoolers because of a makerspace program we have developed. We offer hands-on programs that teach arts and sciences skills and inspire creativity for all ages, all at the library (both indoors and outdoors!) for free. We depend on lots of community support to keep this program going — from volunteers to donations to sharing of skills. I'd love for you to come and see what we have going on!

Did you know that many elementary schools aren't equipped with high-tech tools and programs that help prepare our kids for the future? Imagine a community that has additional barriers, like limited transportation, a need for English language skills, and few organizations in walking distance where children and families can learn and develop technology skills together. My name is Guadalupe, Library Services Manager at the Ponderosa Joint-Use Library. I'm helping to develop an intergenerational, bilingual makerspace to help children and their families develop skills in coding, science, technology, sewing, and so much more.