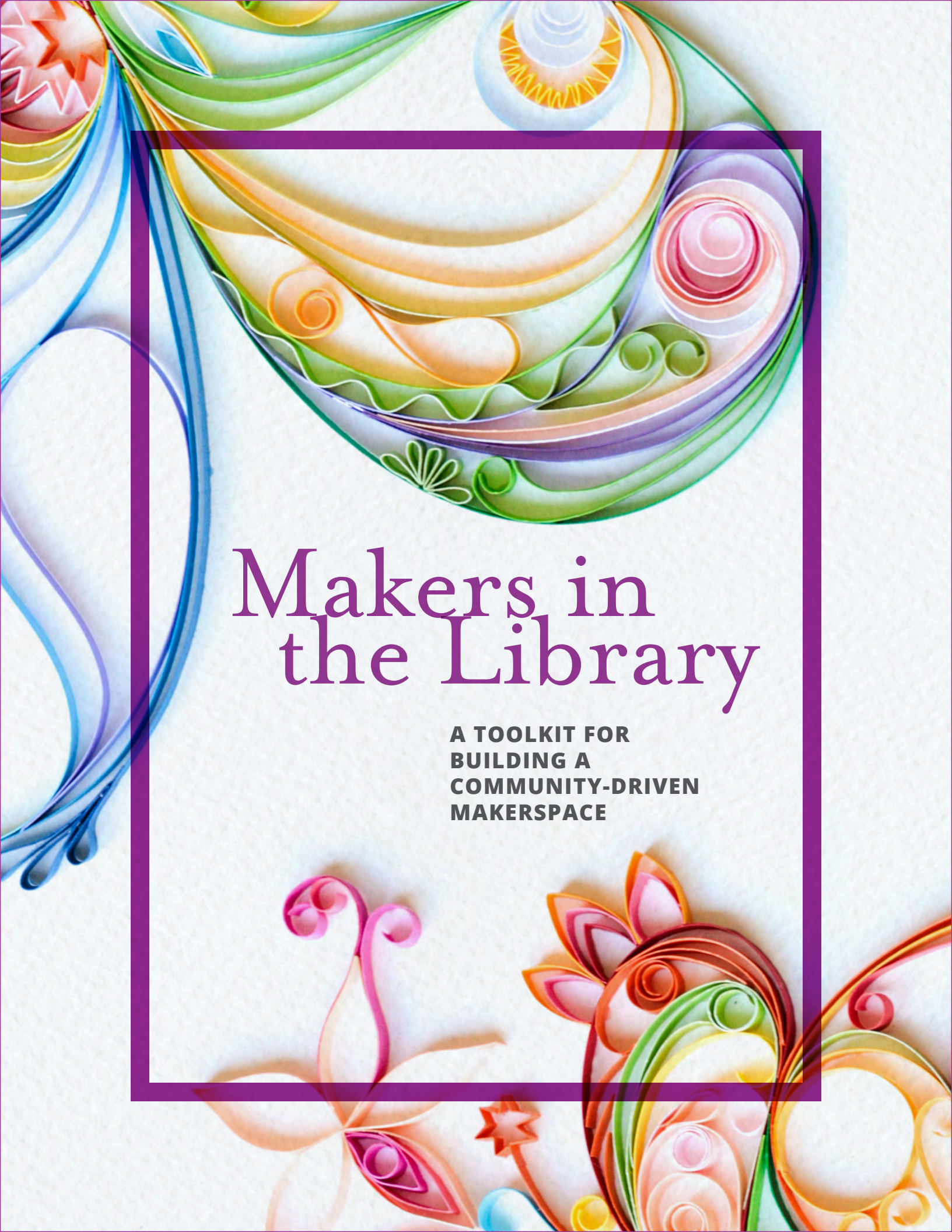




Makers in the Library

**A TOOLKIT FOR
BUILDING A
COMMUNITY-DRIVEN
MAKERSPACE**

Acknowledgements

We are so grateful for the contributions and generous spirit of all our colleagues who have helped us on this project. So many people provided inspiration and guidance so that 10 public library sites were able to develop community-centered makerspace programs. And those 10 libraries rolled up their sleeves, worked hard to test out the process, and helped to collaboratively develop the tools that we now share in hopes that more libraries can learn from their experiences and follow their lead.

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The background is an abstract watercolor painting with a purple border. The colors are vibrant and blended, featuring shades of blue, green, yellow, orange, and red. The text 'Welcome' is centered in a large, dark red serif font. Below it is a list of eight items, each preceded by a small purple square icon. The list items are in a bold, dark red sans-serif font.

Welcome

- ▣ **INTRODUCTION**
- ▣ **WHAT IS MAKING?**
- ▣ **THE MAKER MINDSET**
- ▣ **WHY MAKE IN THE LIBRARY?**
- ▣ **WHAT DEFINES A MAKERSPACE?**
- ▣ **FEATURED LIBRARIES**
- ▣ **OUR APPROACH**
- ▣ **HOW TO USE THIS TOOLKIT**

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 makespaces, 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 young and old alike.

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 is specifically for libraries with limited resources. Perhaps your library:

- 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 is not 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 relevance to meet the needs of your community. We share these tools, alongside stories of successes and struggles from the 10 libraries in our pilot project, in the hope that they illuminate the possibilities and encourage you to give it a try and to persevere, no matter what your constraints.



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

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. — LIBRARY STAFF



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.

Makers are:

- * Curious
- * Playful
- * Hands-on learners
- * Resourceful
- * Self-directed
- * Persistent and learn from failure
- * Collaborative and learn from others
- * Willing to share ideas
- * Problem solvers
- * Focused on process more than finished product
- * Open to the unexpected
- * Comfortable with “not knowing”

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. — LIBRARY STAFF

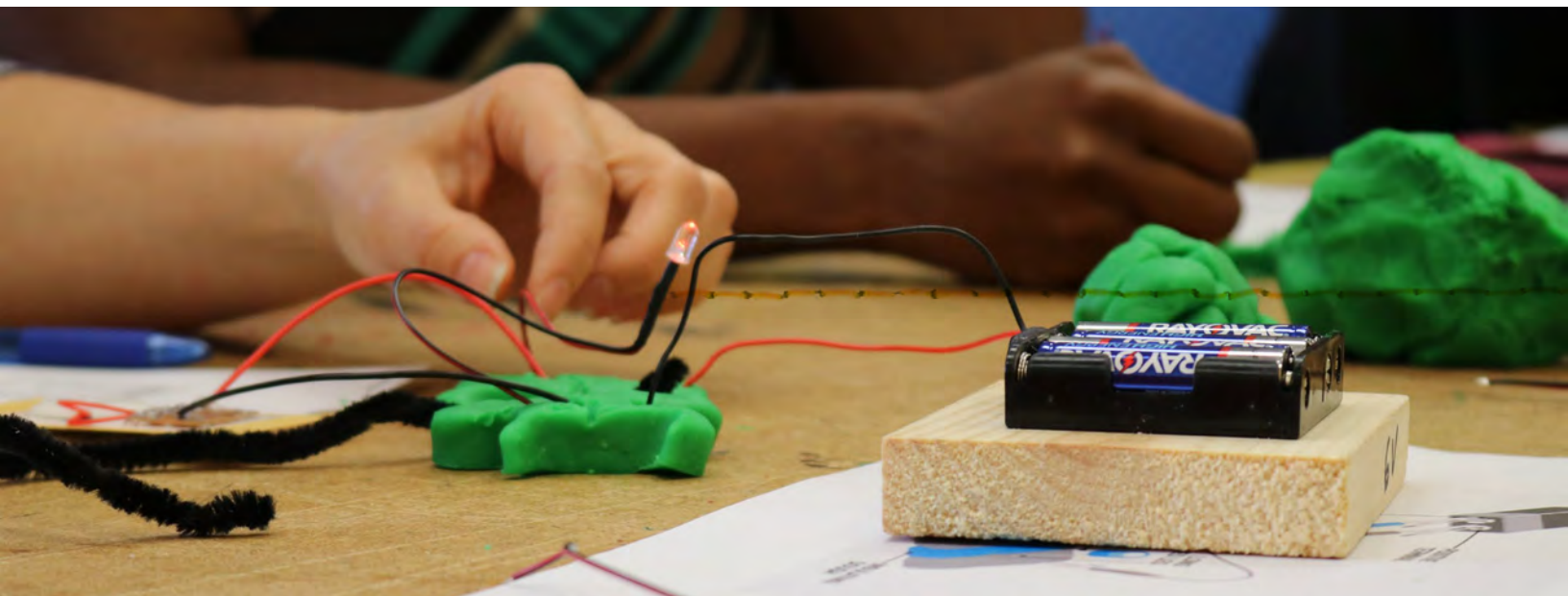
WHY MAKE IN THE LIBRARY?

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/ 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. — LIBRARY STAFF



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. Across the 10 sites in our pilot project, 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 is either specifically designed for or converted into (e.g., underutilized computer room) a permanent space for maker activities, tools, and materials.

COMMUNITY EVENTS

Maker programming is brought into the community through an existing event or location (e.g., farmer’s market or community center) or by hosting an event dedicated to making (e.g., Mini Maker Faire). Events are often hosted in collaboration with local makers and/or community organizations.

MAKER BOX PROGRAM

Tools and materials for maker activities (usually including activity guide and facilitation suggestions) are housed inside an easy-to-transport box or bin that circulates among branch libraries.

VIRTUAL PROGRAM

Demonstrations, tutorials, or live interactives are used to engage with patrons online, whether *asynchronously* (on-demand through archived videos and subscription services) or *synchronously* (live demonstration or activity through social media or video conferencing).



FEATURED LIBRARIES

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. Over this ~3 year period, the goal was to develop a toolkit based on a pilot with 10 diverse libraries throughout the state 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 10 very unique models for how maker programming can thrive in communities that may often be overlooked.

The 10 libraries that are highlighted throughout this toolkit are:

- Anaheim Public Library, Ponderosa Joint-Use Branch
- Corona Public Library
- Kings County Library, Hanford Branch
- Lake County Library, Lakeport Branch
- San Bernardino Public Library, Feldheym Central Branch
- County of San Luis Obispo Public Libraries, Atascadero Library
- Santa Clara County Library District, Gilroy Library
- Santa Paula Library District, Blanchard Community Library
- Solano County Public Library, John F. Kennedy Branch
- Tulare County Library, Exeter Branch

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.



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



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

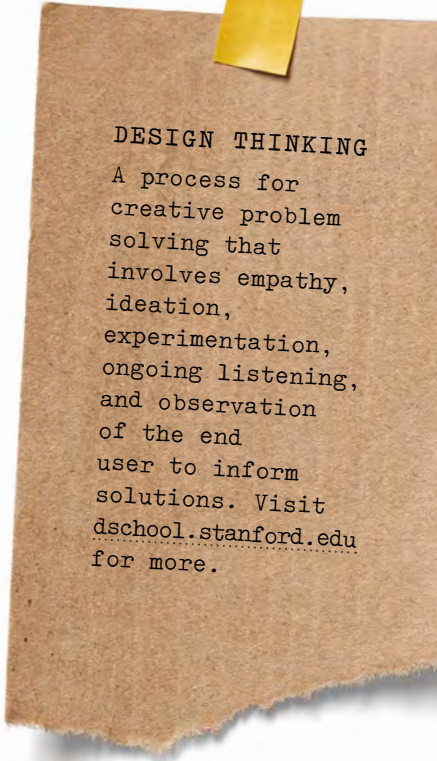
OUR APPROACH

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.



DESIGN THINKING
A process for
creative problem
solving that
involves empathy,
ideation,
experimentation,
ongoing listening,
and observation
of the end
user to inform
solutions. Visit
dschool.stanford.edu
for more.



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.

— LIBRARY DIRECTOR

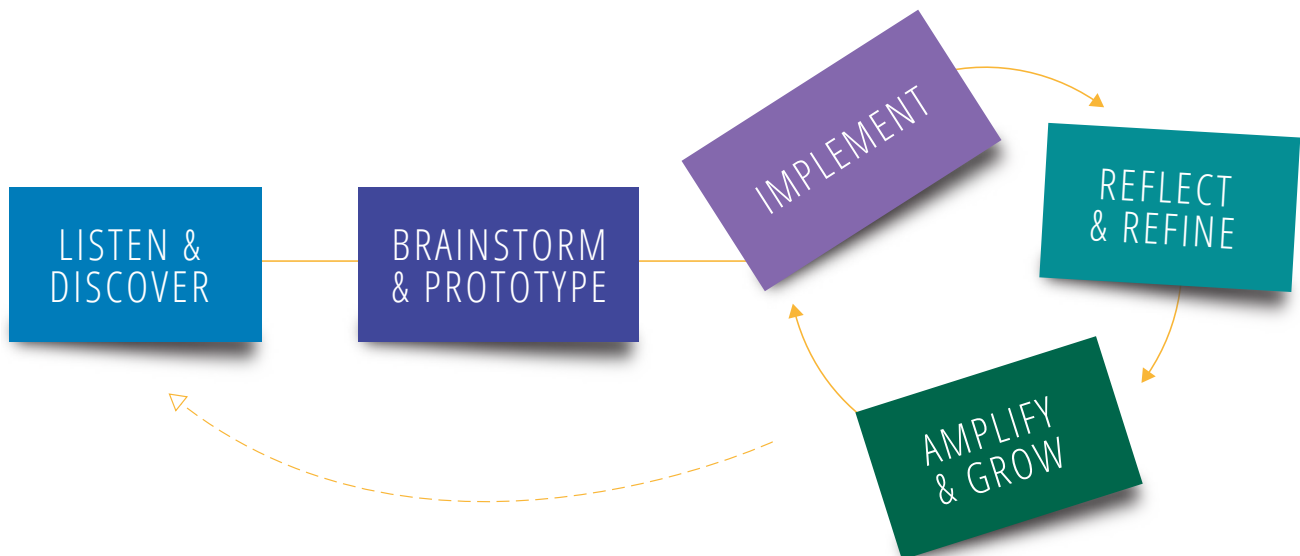
HOW TO USE THIS TOOLKIT

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 pilot sites, 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.



This triangle at the top of 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 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**
- ▣ **STRATEGIC LISTENING 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 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

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?

ECOSYSTEM

In our usage, the library's makerspace is part of an interconnected network of organizations and people who contribute to a healthy environment for making in your community, also known as a maker ecosystem.

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. — LIBRARY PATRON

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.

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.

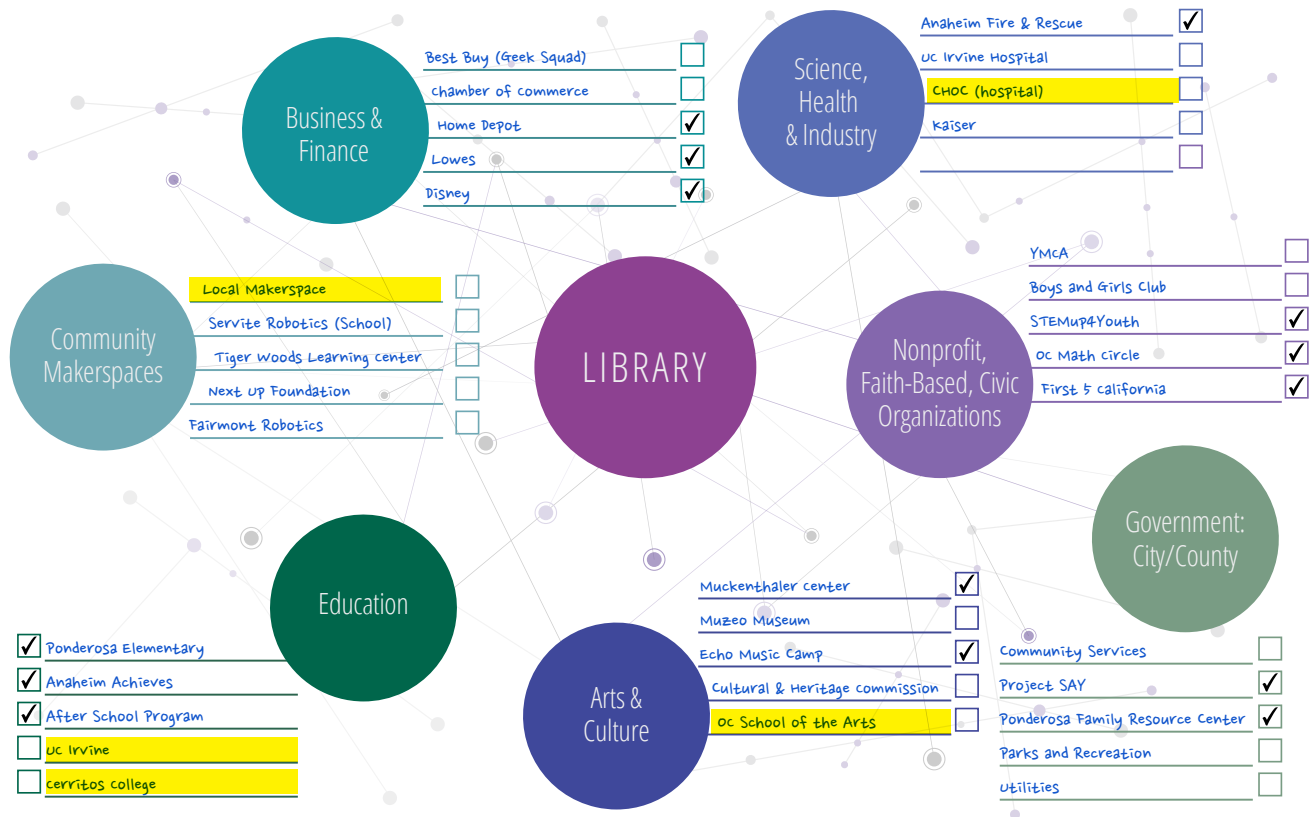
TOOL

MAKER ECOSYSTEM MAP

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



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 one of our pilot sites, the 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

(marked with a check) 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.

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.

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. 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 or computer lab 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, 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!



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 to staff and stakeholders why certain programs are or are not included. Don't worry if you struggle to answer some of these questions now. We heard from our sites 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 simple tool helps you to review your existing program offerings, identify the programs with maker elements, log the details, and reflect.

STRATEGIC LISTENING 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 stakeholders, 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 to help guide the direction of your maker programming.

FOCUS GROUP

A small-group discussion to learn about opinions on a specific topic, in order to guide future action.



A focus group meets at Blanchard Community Library.

how to RUN A FOCUS GROUP

STEP 1

CREATE YOUR INVITATION WISH LIST

Think about who would give you really insightful information to move your project forward. 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. 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 nonprofit organization, and a local business)

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 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 asking each of your stakeholders.

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.

Interpreting the Results of Your Focus Group

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 with various stakeholders to help showcase why your community needs a makerspace and the rationale behind your audience and programming decisions.



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. — LIBRARY STAFF

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. 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

UNIQUE ASPECT ABOUT THE PROGRAM DESIGN OR ATMOSPHERE

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 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 a two-sentence example:

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?

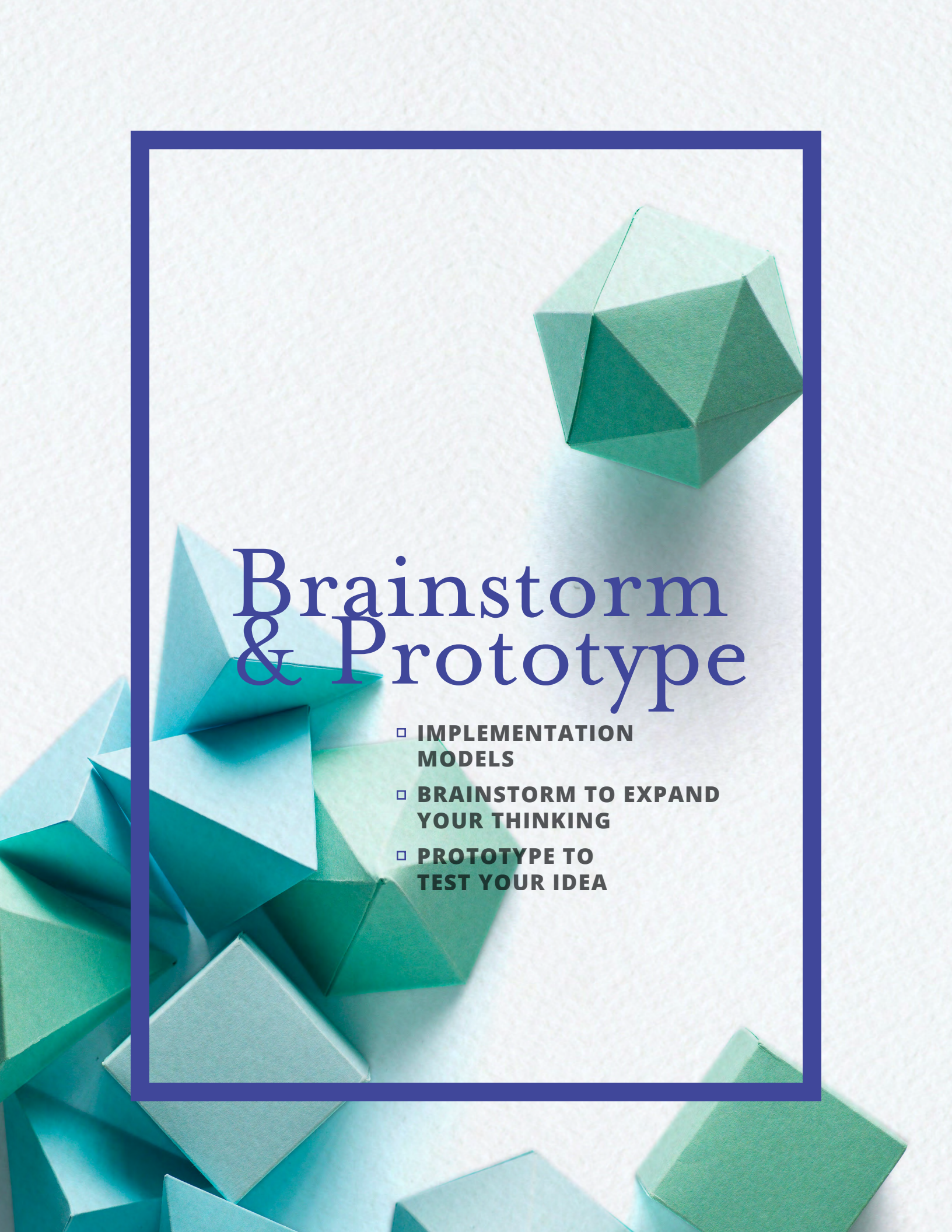
STEP 7

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.



Brainstorm & Prototype

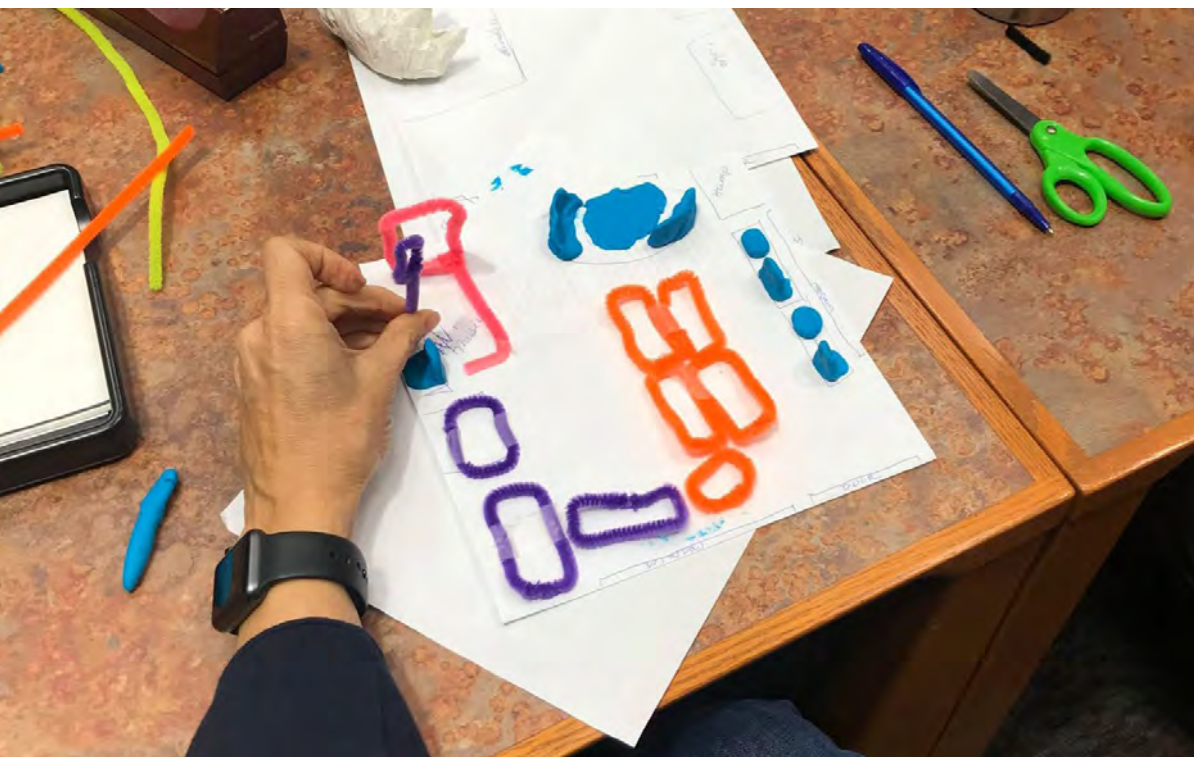
- ▣ **IMPLEMENTATION
MODELS**
- ▣ **BRAINSTORM TO EXPAND
YOUR THINKING**
- ▣ **PROTOTYPE TO
TEST YOUR IDEA**

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. — LIBRARY STAFF



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

The 10 libraries from our pilot project created makerspaces that could each be classified in one of five main categories, which we refer to 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.

Look at the benefits and challenges of the different implementation models and choose one way to move forward. 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.

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

- Programs can be offered without a dedicated space, affording flexibility for libraries with limited space
- Schedule can revolve around staff or volunteer availability
- Doesn't need to be open all the time

Challenges

- 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



Creativity is in our mission statement. When you come to the library, it's not just about books now. It should be a place where you can learn and create new things.

— LIBRARY STAFF

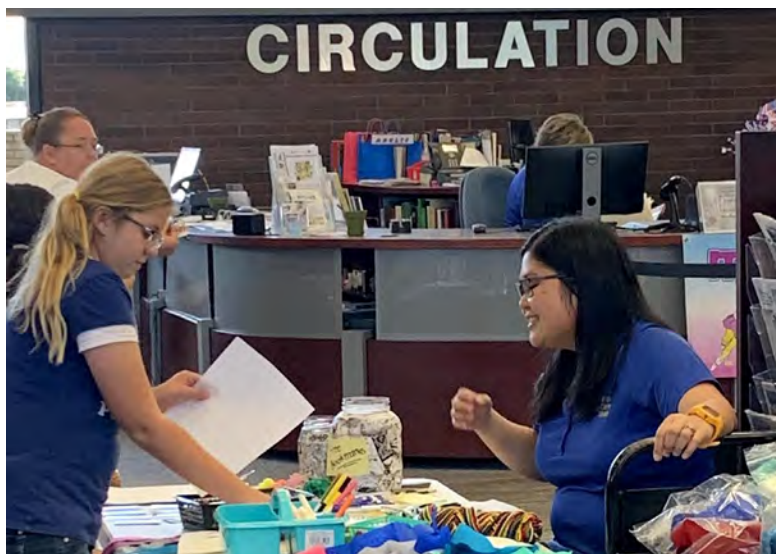
Exeter Library's multi-use program room is set up for makerspace activities a couple of times each week. The library has gradually been working to replace older furniture with new chairs and tables that are more flexible and easy to move. Staff have noticed how important it is to reserve empty floor 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.

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 storage of supplies (e.g., ventilation, electrical supply, sinks, secure equipment)
- 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.

Help us develop a place for imaginary play with nature and science!

Lakeport Library Children's Patio

Examples of Possible Features for the Patio



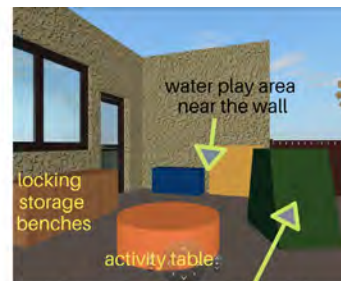
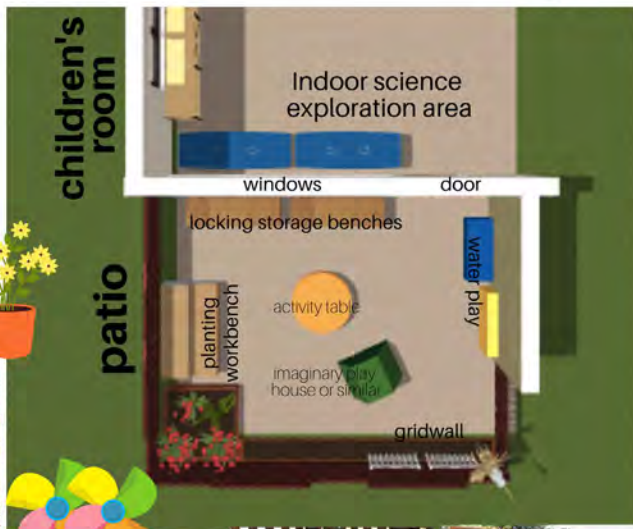
planting workbench and worm compost bin



look at how plants grow



water and wind play
imaginative play
constructive play



Imaginary play structure (like a play house or farm stand)



grid provides a place to hang interactive elements



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

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.

Community Events

One way to reach a broader audience is to offer your maker activity outside the parameters of your library through hosting or participating in community events. The Maker Movement is known for its “show-and-tell” events called Maker Faires, which convene makers of all ages and types. You might bring tools and materials to host an activity or demonstration at a booth during a fair, or you might offer a maker experience at a school, farmer’s market, retirement home, or club. Whatever the setting, the community event is an opportunity to share making with new audiences, exchange ideas with other makers, and let more people know that the library is a place for making.

Benefits

- Raises visibility of 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

Challenges

- May be time-consuming to organize
- 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
- Might require a special vehicle
- Activity must be engaging but relatively quick
- Staff are off-site for the event and not available to work inside the library

The **Gilroy Library** organized and held its first ever Mini Maker Faire in 2019 with great success. An estimated 3,000 attendees participated in hands-on experiences presented by schools, artists, museums, and independent makers (as seen in the images at right and on the following page). The 2020 event was slated to be bigger and better than the first but had to be canceled due to the COVID-19 pandemic. Organizers say that even the effort to recruit makers has forged new supportive partnerships with many sectors of the community.





There were many hands-on opportunities at the Gilroy Mini Maker Faire, hosted by the Gilroy Library.



Corona Public Library takes their makerspace program out to community events.

Corona Public Library works in conjunction with the municipal Recreation Services Department to bring programs in a mobile vehicle around the city. Pictured at left is an example of the Maker Exchange's booth at a city festival. Participation in an event like this requires portable staging equipment, such as folding tables, a pop-up shade structure, bold signage, and a method for transporting the project supplies.

Maker Box Program

Maker boxes are conveniently packaged activity kits that offer an effective way to share rich resources between library branches. Each box comes with all the tools to launch a program, with instructional guides included. Sometimes consumables are included in the box, but simple things like paper and scissors are often left to the branch to supply, with only the more specialized materials included in the box. Many branches collaborate on developing ideas for the kinds of activities to feature, and then someone takes the lead to maintain the collection, oversee a distribution system, and circulate the maker boxes between branches.

Benefits

- Resources are used more often
- Good for libraries with no or low budgets to offer a greater variety of programs
- Can test if patrons like specific tools and materials before buying for the branch
- Less intimidating for staff that aren't used to maker activities
- Builds collaboration and sharing of best practices between branches

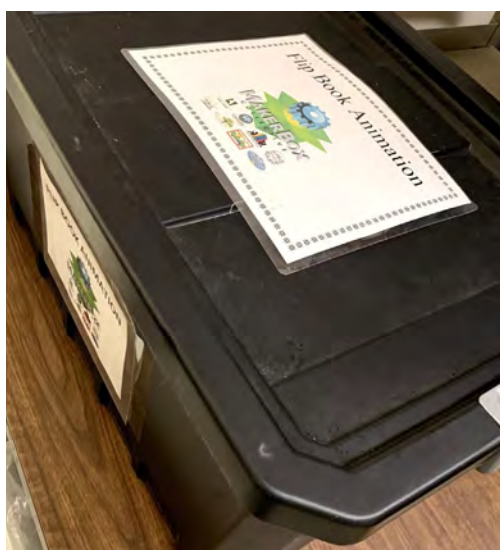
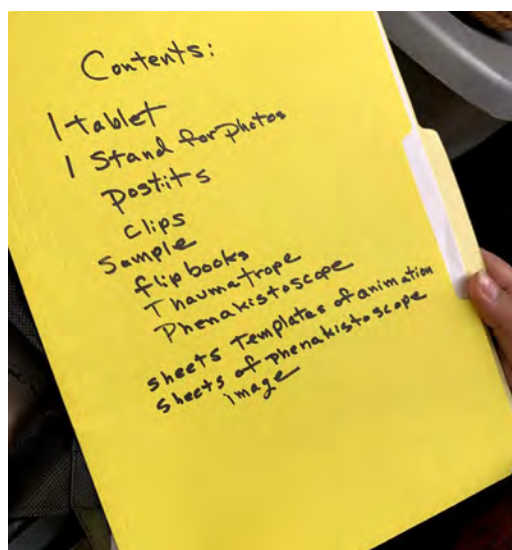
Challenges

- Logistics for maintenance, restocking, and cleaning between uses
- Reservations and delivery system needed
- Materials are limited to items that are transportable and fit in a box
- Patrons might have to wait to repeat popular programs

The **Tulare County Library** system is investing in maker program boxes to circulate to all the branches in their large rural system. Staff members brainstorm ideas for types of activities to include, as shown in the simple circuits activity box pictured here. Contents include LED lights, coin cell batteries, conductive tape, and instructions for leading a workshop on paper circuits. Jose Ruiz-Garcia, the librarian at **Pixley Library**, has taken the lead on building and maintaining the kits. Rather than build all the boxes at once, he's launching and testing a couple at a time, gathering ideas and input from all branch staff before building more kits.



Librarian Jose Ruiz-Garcia assembles the Simple Circuit Maker Box at the Pixley Library.



The Blanchard Community Library created this Flip Book Animation maker box.

The **Blanchard Community Library** is a small library with no other branches, but they benefit from a collaborative endeavor between their library and others in the region. Along with seven other libraries, they've formed a partnership called **MakerBox Collective**. Every year, the libraries each agree to develop one maker box. They work together to cover a diverse assortment of activities and avoid overlap or repetition. The libraries rotate the boxes according to schedule once a month.

Virtual Maker Program

Virtual programs are delivered remotely, engaging with patrons online through demonstrations, tutorials, or live interactives, whether *asynchronous* (on-demand through archived videos and subscription services) or *synchronous* (live demonstration or activity through social media or video conferencing). The closure of libraries and stay-at-home orders due to the COVID-19 pandemic prompted many libraries to pivot to an online delivery model for their programs. Some produced how-to videos, while others launched live streaming events on Facebook, Instagram, or YouTube. Most libraries have decided to adopt virtual offerings as an ongoing component of their programming even after the pandemic because it has the capacity to reach people who generally might not be able to visit the library in person.

Benefits

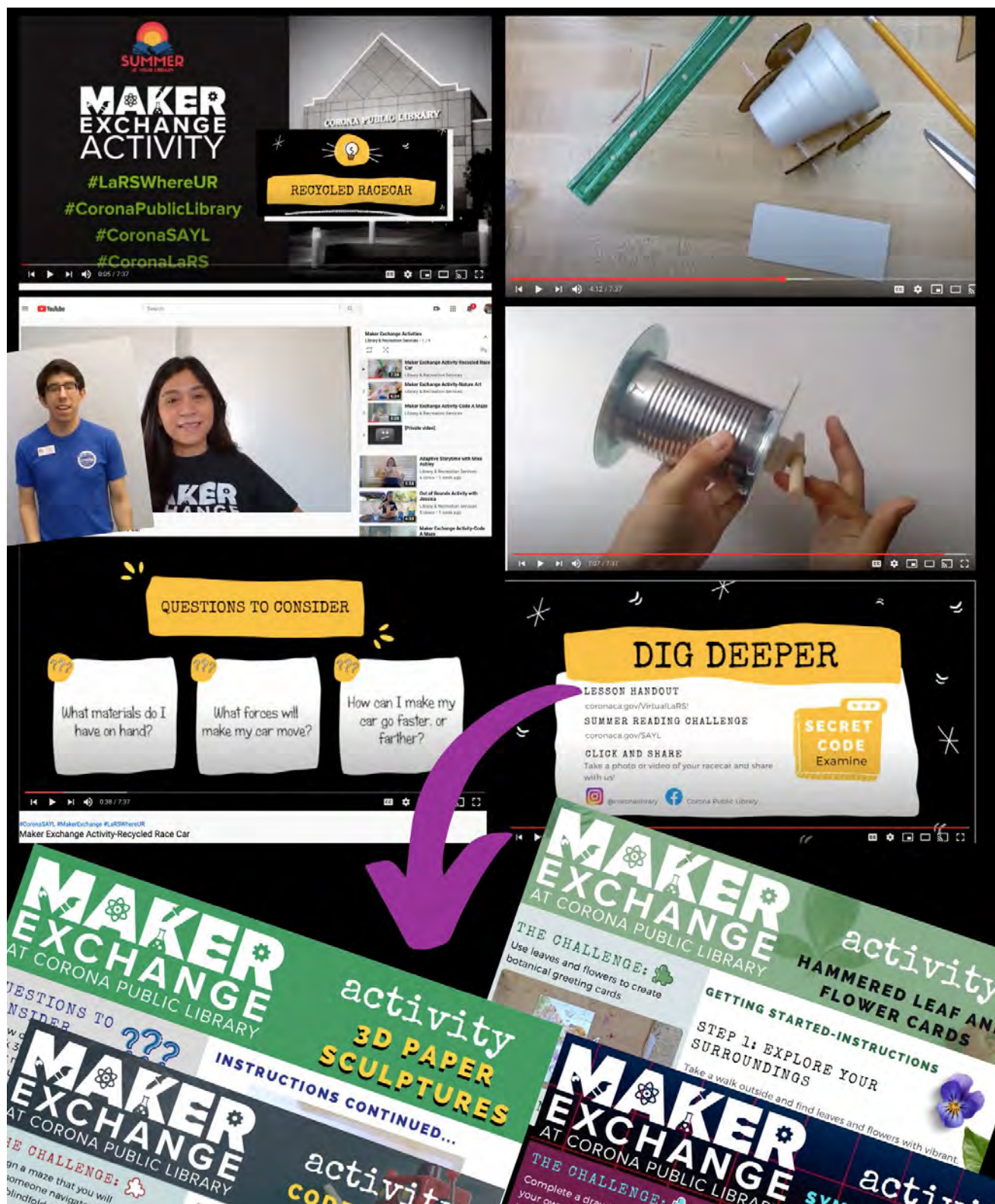
- Potential to reach people who cannot attend a library program
- Patrons can repeat program as often as they wish
- Patrons can go at their own pace (e.g., pause video and repeat instructions)
- Staff can share a collection of both original and curated digital program content
- Unlimited number of participants
- Low supply costs

Challenges

- Requires technical aptitude for staff and patrons
- Digital divide makes programming inaccessible to some
- Patrons might not have access to supplies and tools
- Requires equipment for media production

At **Corona Public Library's** Maker Exchange, once staff realized the COVID-19 pandemic would prevent in-person programs from taking place over the summer, they designed and produced a series of virtual activities. The activities include a video, a printable handout, and the availability of materials for curbside pickup (though most activities are designed to use simple household items). These videos and printable guides can be used over and over, and they now constitute part of a growing virtual resource for Corona makers, young and old.

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.



Corona Public Library's virtual maker programs from the Maker Exchange include videos, written materials, and supplies for pickup curbside.

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.

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

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



Brainstorming with your team can open doors to creative solutions. Here, pilot 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.

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 committing to the full-blown program. Creating a test or prototype can provide you 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

PROTOTYPE

An early-stage model of a concept designed to test certain aspects of its functionality.

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 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?

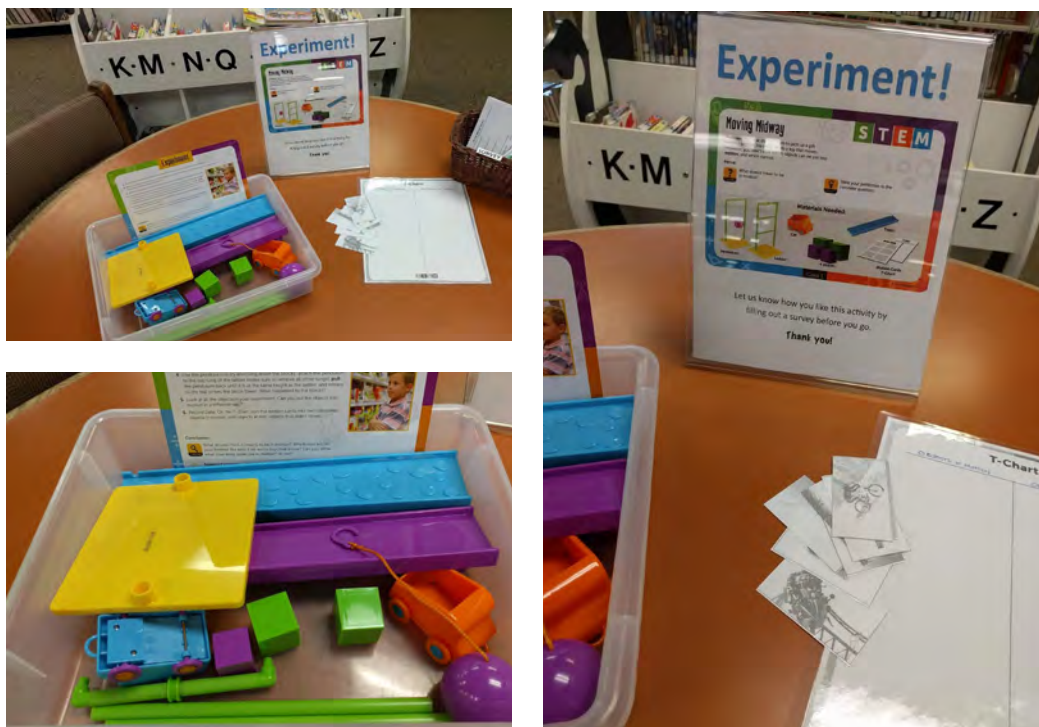
Gather data on: delivery method, type of activity

Prototype Examples from Pilot Libraries

Seeing how other libraries approach their prototypes can often be helpful with shaping yours. Here we share prototype examples from three of our pilot program libraries: Lakeport, Exeter, and Blanchard.

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.

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.

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.

TOOL

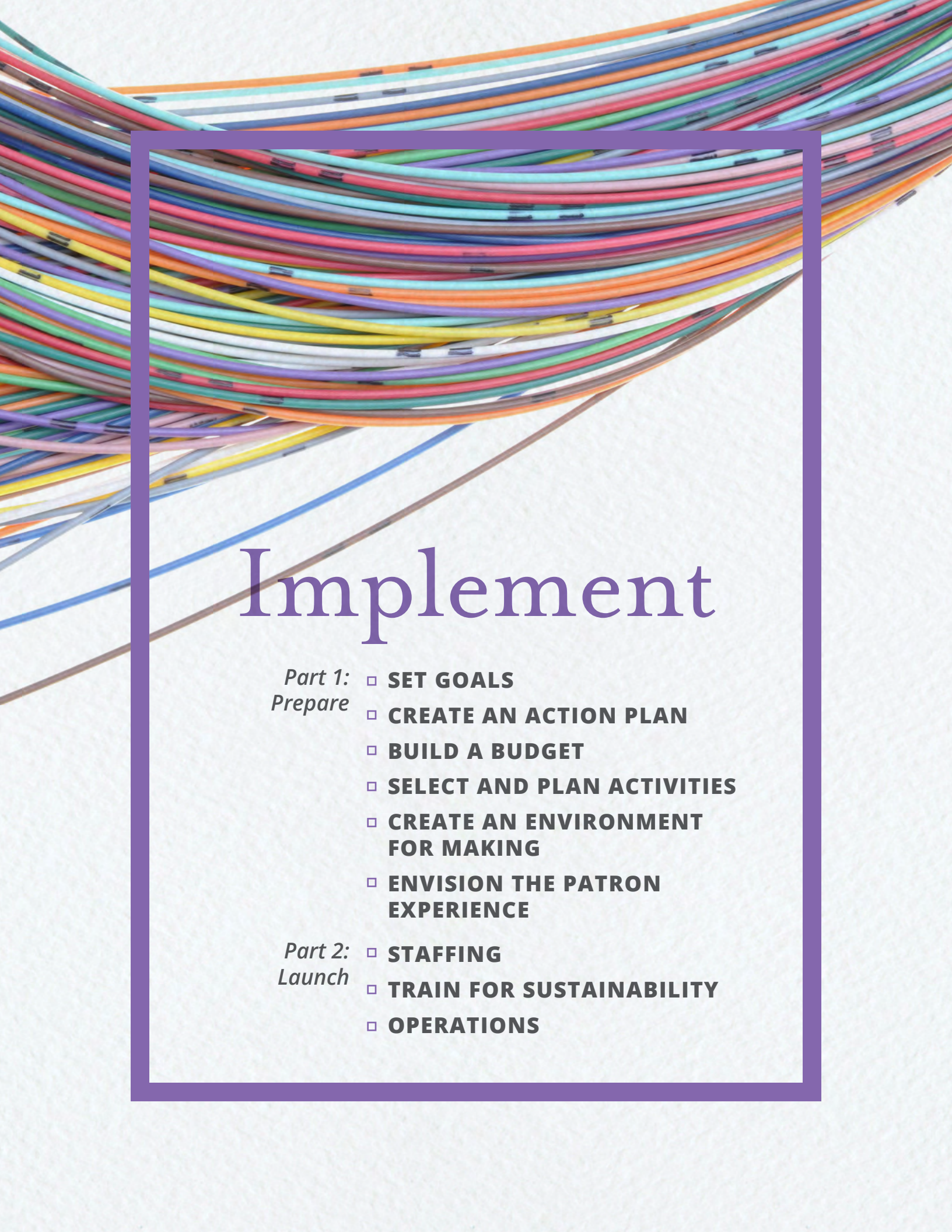
PARTICIPANT FEEDBACK FORM

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 portion of the Reflect & Refine section.

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.



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 into 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. And 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 stakeholders 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 partnership, program, and physical space goals set by libraries in our pilot project.

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 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 stakeholders.

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. The libraries in our pilot program all agreed that perseverance and flexibility are central keys to success!

Our pilot sites shared the following 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 of our pilot libraries decided to post their goals and action plan on a bulletin board or in the break room so that everyone could 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.

ACTION PLAN

A project management tool that helps to outline, assign, and track the steps you need to take to accomplish your goals.

TOOL

ACTION PLAN

This tool includes a sample action plan from one of our pilot sites and a link to an online template to complete 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.

— LIBRARY STAFF



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 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. You'll also want to coordinate a plan for troubleshooting when any issues occur. If purchasing laptops or tablets specifically, 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 section 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.

This set of **tool cards** from the SparkTruck gives a brief overview of some popular tools and what materials and activities pair well with each one.

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.

As you write out more activity plans, we suggest keeping them all in one place, either in a physical binder or a digital computer folder. That way, you and other staff members can effortlessly refer back to the details of an activity, making it easy to repeat and modify the activity at a later date.

And if you remember only one thing, let it be this: Our pilot sites told us, time and time again, that 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, adaptations, and other details for your maker activities. An example glass etching plan is included.



FURTHER READING

Maker Ed's Resource Library provides a curated set of resources related to maker education. Click on "Projects & Learning Resources" to search a collection of popular maker activities that can be adapted to your program.

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.

If you're planning to design maker boxes, Madison Public Library provides a **database of kits** available through their makerspace, The Bubbler.

The Bay Area Discovery Museum has a searchable **database of activities** to boost creativity for children ages 2–14 and up.

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

Making & Tinkering with STEM provides an assortment of activities for children ages 3–8 using everyday materials to design and build solutions to problems faced by characters in their favorite books.

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.

For our pilot project, we used 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 your maker programming.

The C is for *child-directed* but you could easily replace that verbiage with the words *participant-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 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.



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?’

—LIBRARY STAFF

- **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.



Lakeport Library's outdoor patio makerspace gives young children the space for exploration and wonder with water and dirt.

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 walk in the door or come up to your table at an event? 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, 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.

This can be tricky when you have a drop-in audience with mixed ages—or if you set up a self-directed activity. Being prepared with ways to modify your activity to make it easier or more challenging as needed is helpful. Why? If an adult walks into your space and sees that you're coloring by number that day, they may think it's too easy and walk out. On the flipside, if that same person walks in 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 and walk out.

How do you keep people in the room—and coming back for more? You make sure the activity helps 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 paper circuits program for tweens and teens. 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. —LIBRARY STAFF



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 hairdryer 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).

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.

Physical movement can be encouraged by:

- Having people stand at tables to work, instead of sitting
- Providing alternative seating, like exercise balls or bean bag chairs, that allow room to wiggle
- Stopping and taking deliberate breaks for a chance to stretch or move around
- Setting up the activity with stations so participants need to get up and move from one to the next
- Playing music to encourage people to sway along



Adults at Corona Public Library make sugar scrubs.

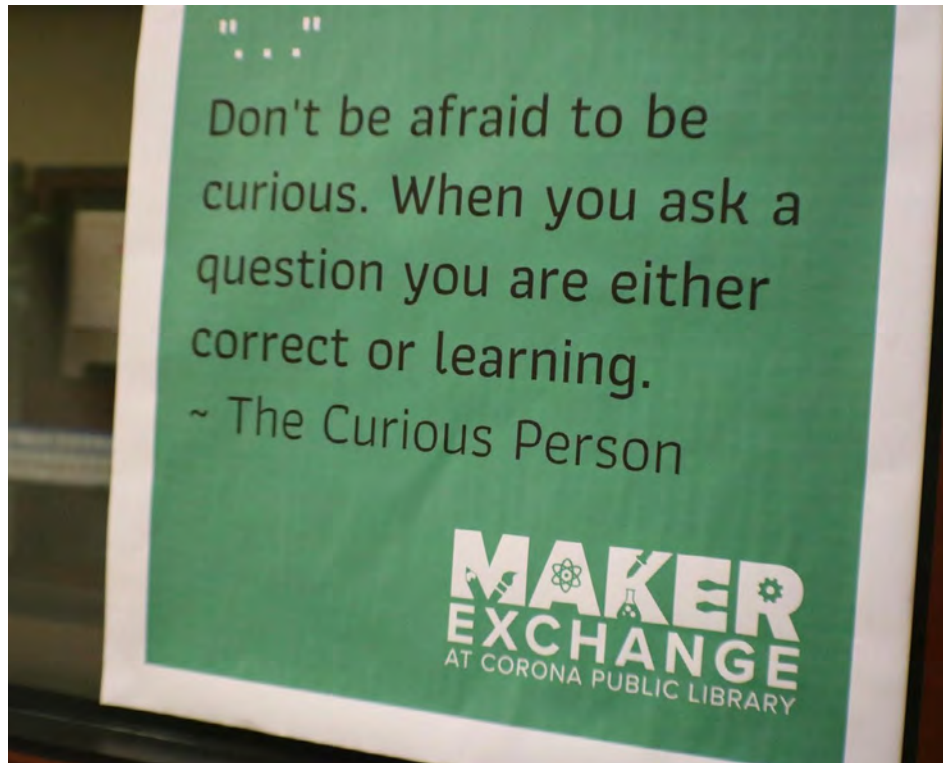
Even minimal movement—such as seated yoga poses or just smiling from having fun—is effective. Physical activity (in whatever form possible) improves oxygen and blood flow to the brain and helps people not only stay engaged but enjoy their time more at your program.

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/programs. All of these things will help establish a vibrant environment for creativity and imagination to thrive.

The final E stands for *exchange of ideas*. Creative collaboration and building off 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.”



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

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!

At one of our small pilot sites, Anaheim Public Library, during a self-directed fiber arts-themed program, 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 castors 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 for programming so teens can feel comfortable 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.

—LIBRARY STAFF

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:

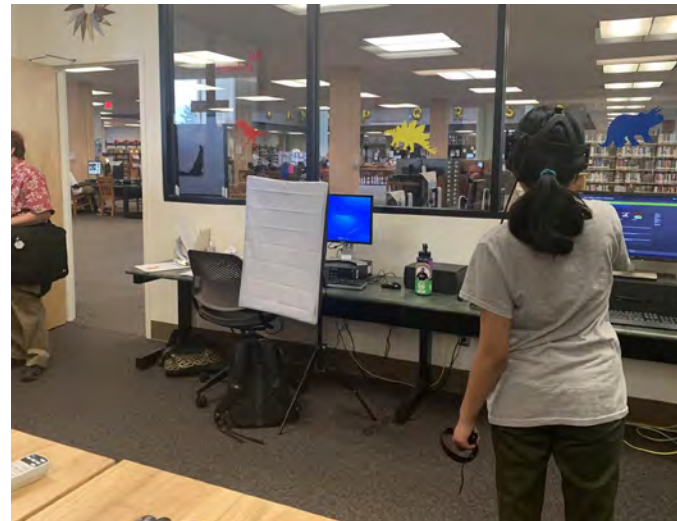
- How do participants find out about the program? Do they need to preregister?
- Is the program visible and/or easy to find? How are they greeted when they arrive?
- How do participants get started? How are they invited to make?
- What does the space look like when they arrive? What is displayed on the 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.

For example, if you're opening up a dedicated space, you'll need to schedule staff for all the hours that it's open and for any workshops you plan. But if you plan to run a weekly or bimonthly program in a multi-use space, you may need less dedicated staff time. 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, we asked the libraries involved in our pilot project what key qualities are most important for makerspace staff. They all unanimously said the three most important qualities are *open-mindedness, curiosity, and flexibility*.

Other key characteristics they mentioned are:

- Community builder, able to connect with your 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

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.



Look Within

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!

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.

—LIBRARY STAFF

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. This is true in both private community makerspaces as well as public library ones. Once people in your community start to learn about your space, make sure to constantly advertise your need for and openness to volunteers.

When recruiting for volunteers, be specific about what they can do to help. Do you need assistance on a regular ongoing basis, or is it a short-term project?



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.

—LIBRARY STAFF

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. Libraries—such as our pilot sites in Atascadero, Corona, and Gilroy—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.

Feldheym Library approached the city and recruited an intern through a local economic development initiative, while our pilot library in Atascadero 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. 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. What happens when that person calls in sick or takes a new job and you have to wait months to hire someone new?

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 library 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 is not 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.

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



- **Encourage free play.** Allow staff to take time on lunch breaks or after you close 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. —LIBRARY STAFF

- **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 while you tell them more about the programs you offer. 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.

FURTHER READING

Check out rich conversation and reflections about training and staffing from several library representatives and get practical tips for success on this ["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 and Safety

When you design the space and select tools, materials, and activities, there are important safety precautions you must follow to ensure that the facility and the people inside it are safe from harm. 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, 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?

Training and Orientation: Employee and volunteer training are essential for creating a safe makerspace, 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 throughout the space 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.

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.

Liability Waivers

Are you offering any equipment that would require patrons to sign a liability waiver before using? One could argue that knitting needles, hot glue guns, and scissors pose a safety risk, let alone laser cutters and soldering irons. Most of the libraries in our pilot program didn't institute a waiver requirement, which was determined based on the tools and equipment that patrons would be using themselves, along with the risks involved. You'll need to consult with your own administration to determine the specific needs at your site. But if tools are only operated by staff members, that may mitigate the need for waivers.

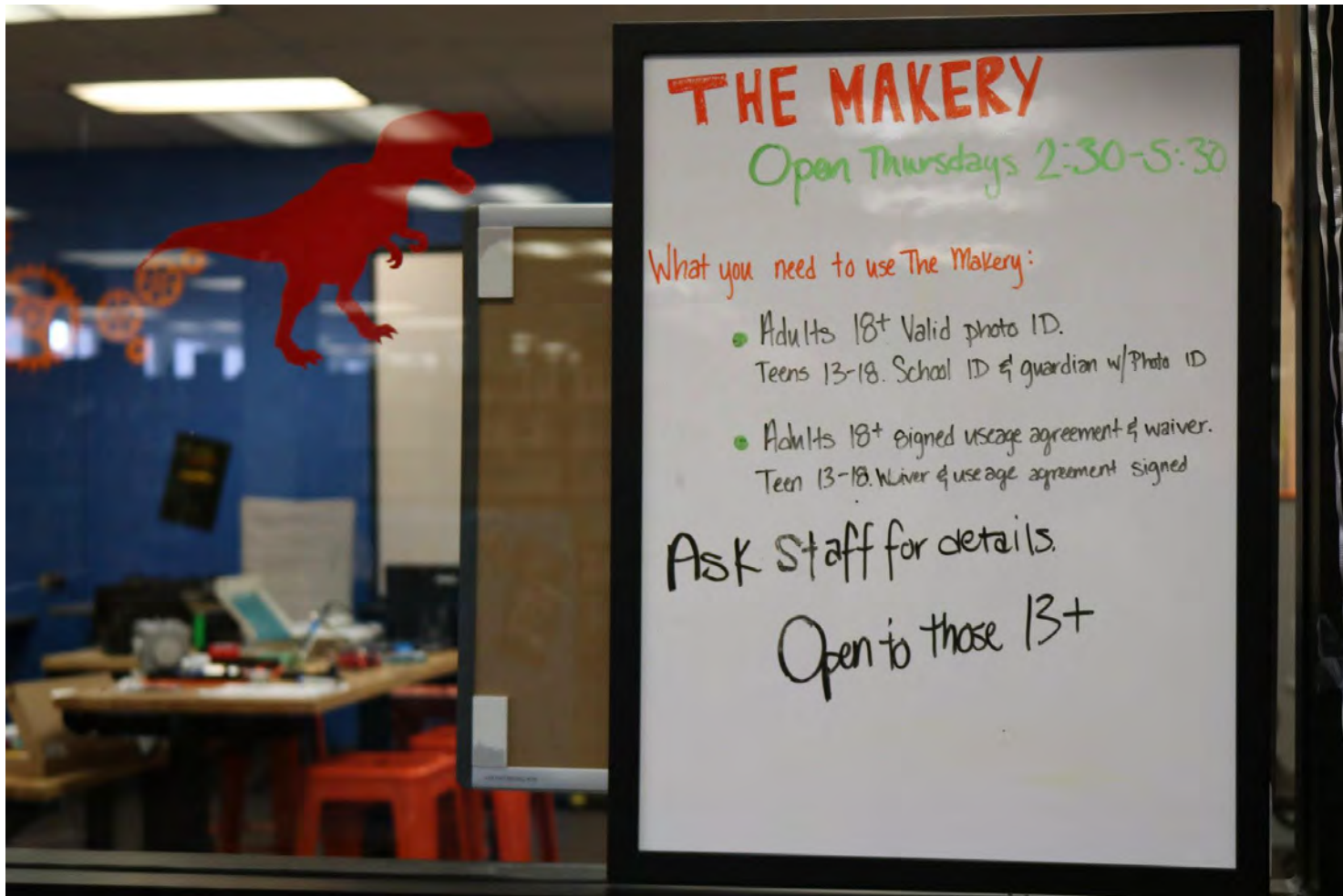
- At JFK Library, patrons are provided a tour of The Makery and invited to fill out an information form and sign a release form. These forms are kept on file in the space, and the staff make sure participants are registered before using the space or participating in a program.
- If you host a large community event, like the Mini Maker Faire that the Gilroy Library hosted, sometimes the liability waiver is connected to your registration form. You might consider this to make the event day less complicated.

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, which is featured every Tuesday night.

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. Most of our pilot 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 gleaned from our pilot libraries.

- 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.
- 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 Makerspace 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?
- Does the patron need to provide their own consumable material or pay a fee to the library for materials like filament, wood, vinyl, or fancy paper?
- 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?

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. Here are a few more examples of maker carts.



Pictured here is an affordable rolling cart for consumable supplies at the Feldheim Library that 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, along with many of the libraries in our pilot, 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.



Alternately, creative reorganization of existing closets or cabinets might be your best strategy for supply storage. Blanchard Community Library reorganized a closet to serve this purpose (before and after pictured here), and Atascadero Library put some underutilized kitchenette cabinets to use for their arts and crafts supplies.

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.

- 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 Feldheim 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.

Registration System

Depending on the type of implementation model you're using, you may need to have a registration system in place. Many libraries already have a digital event registration program, but if not, there are options available, from a simple clipboard sign-up sheet to an event management software system.

For any in-person or virtual program you're implementing, it's important to keep track of the ratio of how many signs-ups there were 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 when people sign up and give them a call the day before the program. Making these calls is a great task for a volunteer.

Registration 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 (e.g., for an in-person program or a Maker Box program)
- Want a certain staff-to-participant ratio to ensure things run smoothly and safely
- Wish to send a reminder before and a thank you after attending

If you're implementing a Maker Box program, you'll need a way for branch libraries to register and receive their boxes. A simple method is to have a set rotation of these boxes that everyone has agreed to in advance, or a sign-up system where a library branch can

reserve a box for a certain time period on the calendar. You could use either your own library calendaring or catalog system or a shared spreadsheet. Be sure to note if a Maker Box happens to be out of circulation for maintenance or repair.

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 in Washco, Utah, produced a [set of YouTube videos](#) to help with safety certification training
- Santa Clara University's Makerlab [tool safety videos](#)



Reflect & Refine

- ▣ **BUILD A LOGIC MODEL**
- ▣ **EVALUATE**
- ▣ **RAPID 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 has become 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 key stakeholders, 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 indepth 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 many of our pilot libraries have employed this mindset to rapidly shift their programming in response to immediate community needs.



Maker projects often use very simple materials in creative ways (Corona Public Library).

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 stakeholders and 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, in the view of your stakeholders, 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 stakeholders agree 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.

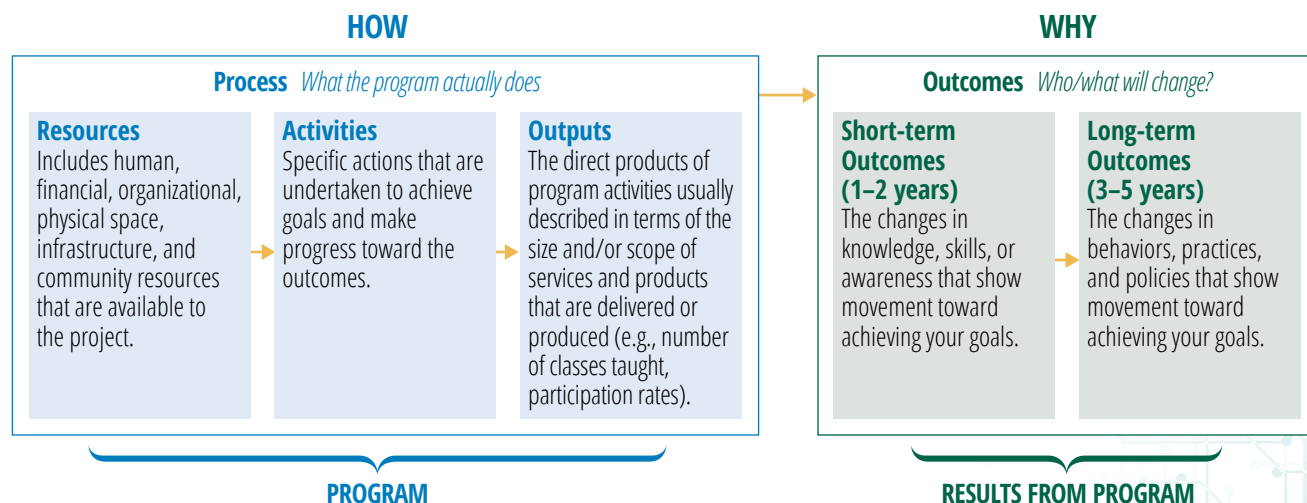
When going through this process, it's helpful to also consider what a logic model is not. Although it captures the big picture, a logic model isn't an exact representation of everything that's going on. Instead, it represents *intention*, not necessarily reality.

LOGIC MODEL
A systematic, visual way to present your understanding of the relationships between the resources you have, the activities you plan, and the outcomes you hope to achieve.

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 from one of our pilot libraries alongside the Logic Model tool in the Toolbox section.

LOGIC MODEL ELEMENTS



how to **CREATE A LOGIC MODEL**

STEP 1

ASSEMBLE A DIVERSE TEAM OF STAKEHOLDERS

Logic models should be developed using a team approach. Involvement of key stakeholders is essential to gaining a clearer understanding of your program goals, assets, and commitments. 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 towards 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 and who will share all of the notes with participants.
- 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 the resources, writing them on individual color-coded cards or sticky notes and securing them under the appropriate element header.

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 before concluding. 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 stakeholders.



All of our pilot libraries 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 stakeholders 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.



Caption



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

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?

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 is not someone's first language, they may be less prone to do an interview with you. If someone is not 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 maker box program?
- How many unique visitors came to your maker web page?
- How many requests for 3D prints were processed?

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 our pilot 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 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 from our pilot libraries 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.

Make-It Survey		
Draw an emoji as a response to the statements below:		
I learned something about Makerspaces	I had fun	I learned something new about STEAM
I would come to another Make-It program	I made something cool	I would tell a friend that I liked a STEAM activity I did today

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.

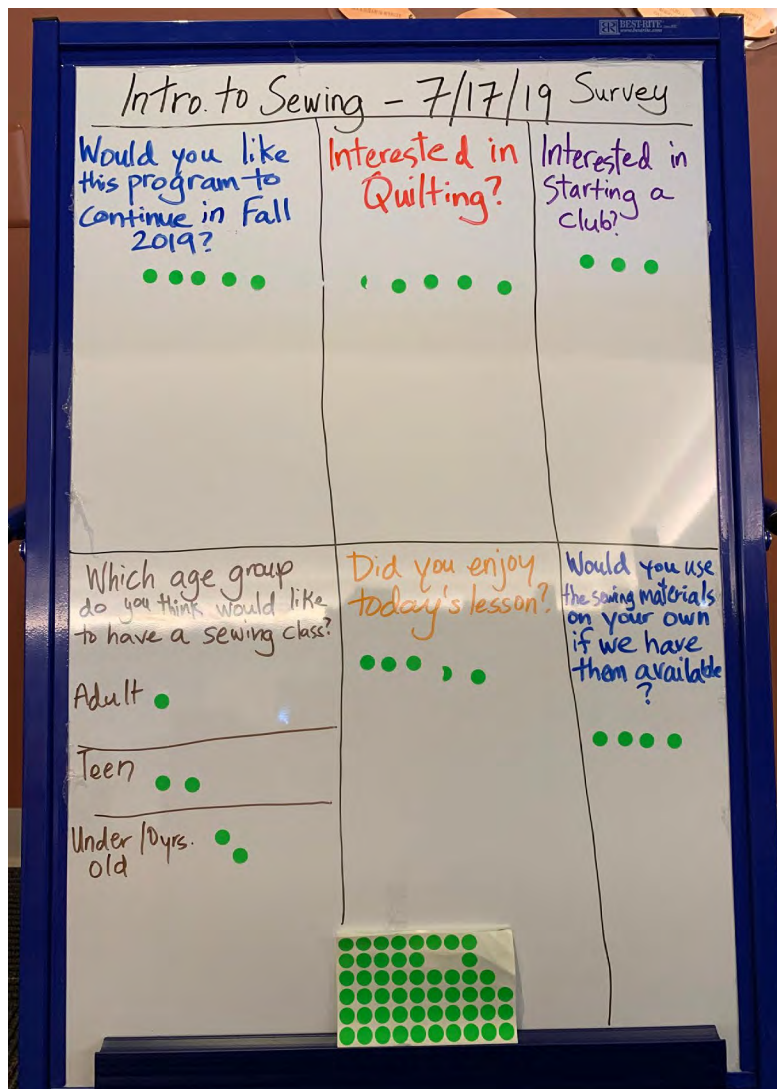
Did you enjoy your time in The Makery today?

What would you like to learn?
Write or draw below.

Anything else we should know?

John F. Kennedy Library
505 Santa Clara Street • Vallejo, CA • 94590
1-866-57-ASKUS • solanolib.org

Your attendance at any Solano County Library sponsored event constitutes permission for your photograph to be used for any promotional purposes.



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.

Regular reflective tasks include:

- Gathering information from participants *during the activity*, sometimes adjusting in the moment to help participants have a better experience
- Writing down notes *after an activity*, with personal observations and thoughts on what went well and things that might be better done differently
- Taking stock of all this information and adjusting *before the next session* to put into practice the things you learned

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 that activity. The team should regularly review the comments in this binder and use this 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.

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 stakeholders, 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. 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 afterwards. 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 had that they liked? 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

TOOL

PATRON INTERVIEW QUESTIONS

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

single best way to gather frank, honest, and useful information was to sit down with the 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 stakeholders with a follow-up report.

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 Listen & Discover 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

TOOL

PEER OBSERVATION

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

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 both.

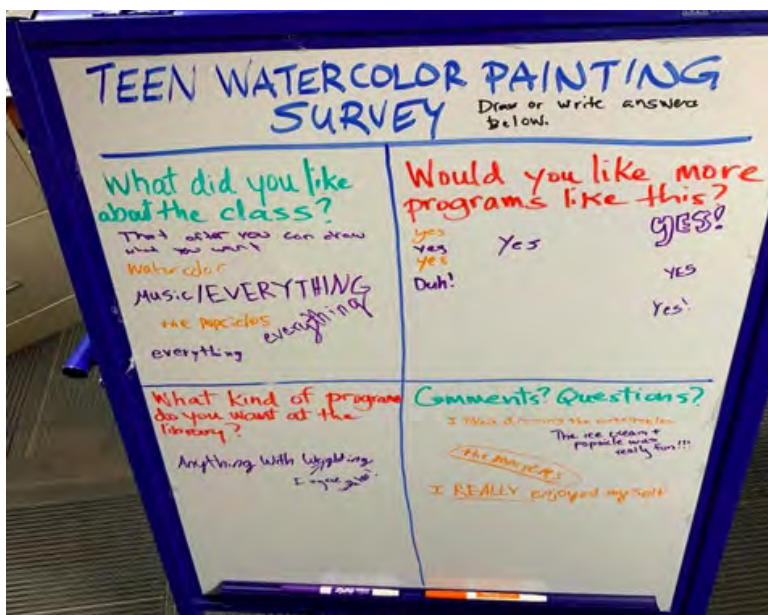
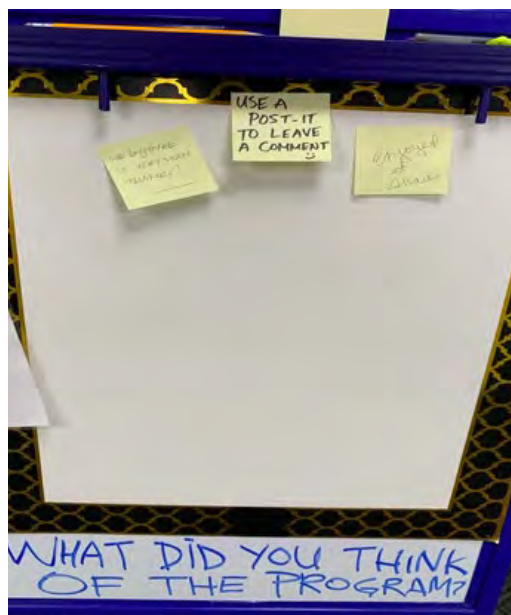
Talk-Back Boards

QUANTITATIVE ——— QUALITATIVE

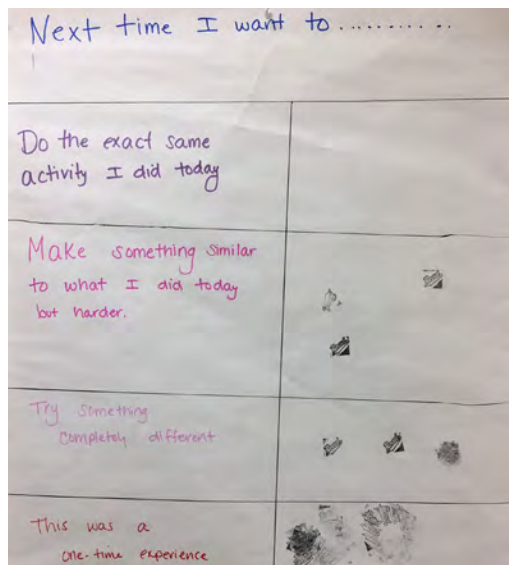
A talk-back board is an engaging way to collect feedback from a group, where participants can see the results in the moment. They are fun and interactive for both small- and large-scale maker programs and events. You won't get in-depth responses using this type of evaluation, but you'll get a "pulse"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

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

- 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 get added 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.



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

- Alternately, 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.

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 in this section isn't intended to be a comprehensive course on evaluation, but rather a broad overview of several approaches with real examples from our pilot 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 here 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 stakeholders, partners, and funders, keeping them connected to the program during this journey.



FURTHER READING

The **Beyond Rubrics** toolkit has embedded tools to capture qualitative and quantitative evidence of the process of making.

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.

RAPID 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 will become an invaluable asset when the needs of the community change and a more immediate response is warranted. Throughout this pilot project alone, we've seen libraries quickly adapt to respond to a number of challenging situations.

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 a cooling center and 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 has 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. Here are just a few examples of how the makerspaces at our pilot libraries stepped up to help during this time of need.

Light Manufacturing

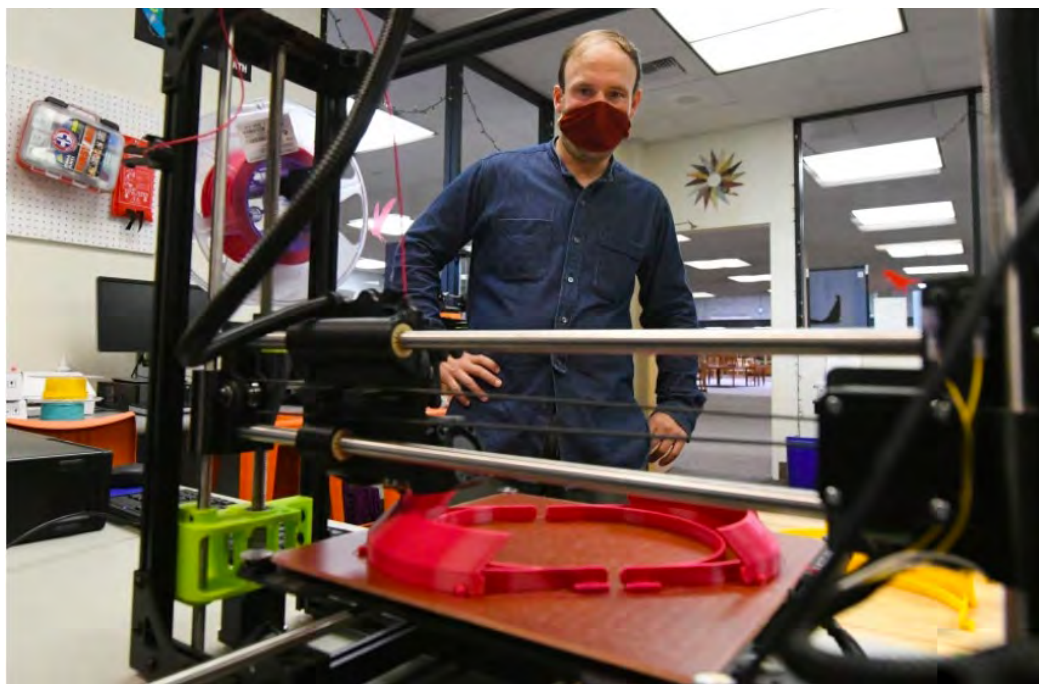
To fill the gap in the shortage of personal protective equipment (PPE) for health care and frontline essential workers, makerspaces used their tools—such as 3D printers, laser cutters and sewing machines—to manufacture PPE parts. This includes face shields, masks, gowns, and more.

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.

In Vallejo, Chris Radin, JFK Library's young adult librarian, led the charge in utilizing the 3D printers in The Makerspace to create face shields for local hospitals, while other staff members, including Angelina Gonzalez, a children's library associate, sewed masks. They collaborated with Vallejo's Risk Management division to ensure these supplies got to folks who needed them most during the pandemic.



JFK Library staff members helped out during the coronavirus pandemic: Charlie Radin uses the makerspace's 3D printers to make face shield holders, while Angelina Gonzalez sews masks. Photo by Chris Riley for Times-Herald.

Shifting Programs Online

Libraries also supported local families by shifting existing programs to an online format. Suddenly the camera and video editing software in the makerspace became valuable tools to support the delivery of high-quality virtual enrichment programs.

Some libraries convened their regular maker program sessions via video conference, while others used social media platforms to share curated and original instructions for skill building, activities, and fun design challenges with their followers. One surprise is that the new mode of program delivery extended its reach to homebound makers, who had never been able to visit the library before due to physical constraints.

At Lakeport Library, this began with simple phone calls to the Creative Club adult programming regulars, and then it graduated to recurring Zoom meetings where they shared their work. Participants even set up creative challenges for one another to attempt before reconvening in the next session.

The JFK Library started to produce their own how-to cooking videos, including this one demonstrating how to make hummus. They shared these videos online across multiple platforms, including YouTube and Facebook.



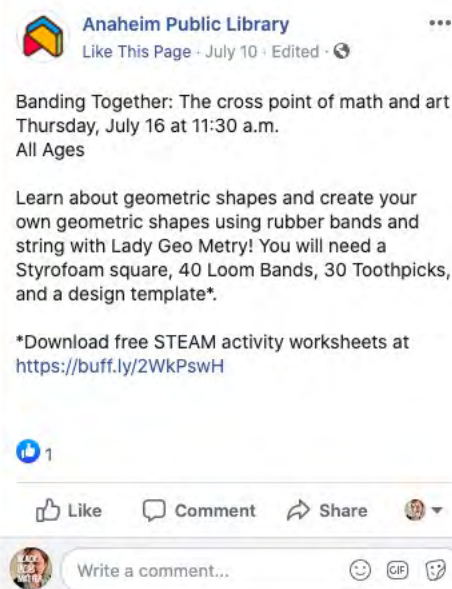
JFK Library offered a livestream cooking demonstration from The Makers.

Supporting Making at Home

Knowing that families sheltering in place would have a difficult time getting the supplies they needed to do the variety of maker activities that were originally planned for spring and summer at the library, staff came up with creative solutions for families to engage in more making at home. Considering that families may not have reliable internet or computer access, staff designed and built activity kits, offering challenges that would utilize the most basic of household materials or items found in nature. Since many libraries in California serve as locations for free summer lunch distribution, these activity kits, along with books, were offered for curbside pickup alongside meals that went to many homes of enthusiastic children.



The San Luis Obispo Library (Atascadero Library's system) teamed up with a local artist to design "Art2Go" kits, distributed curbside to hundreds of local tweens and teens.



VIRTUAL: STEAM Adventure Banding Together



Thursday, July 16, 2020

Learn about geometric shapes and create your own geometric shapes using rubber bands and string! You will need these supplies: Styrofoam square, 40 Loom Bands, 30 Toothpicks, and a design template. Limited STEAM Kits are available on a first-come, first-served basis through Curbside Pick-up. Call your neighborhood Anaheim Library below for more information.



[Banding Art and Math Together](#)

Date: July 16, 2020

Time: 11:30 AM - 12:00 PM

Location: This program is virtual. Watch this program on the Library's Instagram or Facebook @AnaheimLibrary.

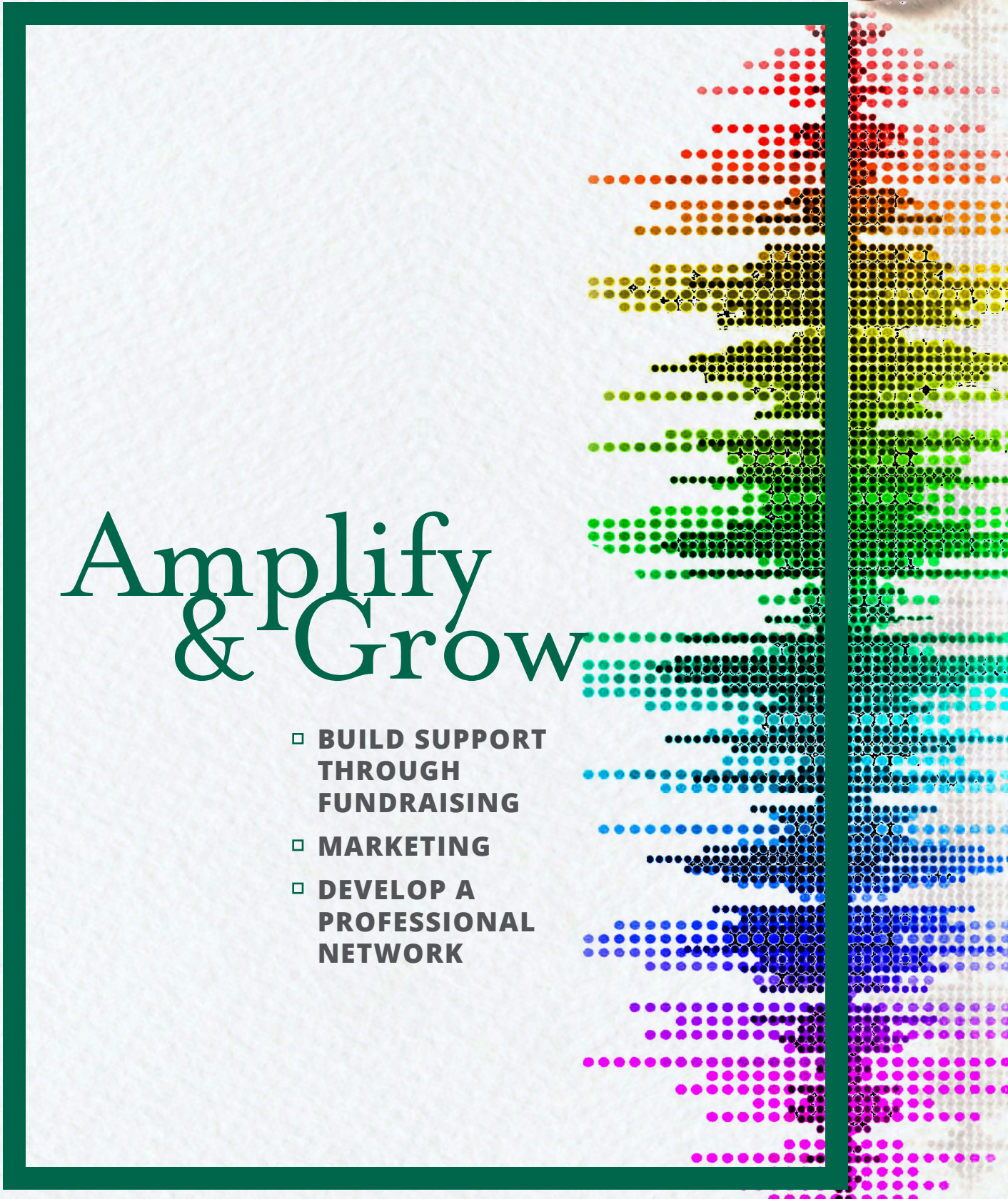
Address: Anaheim, CA 92805

Link: [Anaheim Library's Facebook](#)



Ponderosa Library helped create STEAM kits in English and Spanish to distribute curbside with lunch at the library. The instructions and video examples were also posted on the library website and promoted via Instagram and Facebook.

The important thing to note from all of these examples is that many of these refinements, although originally thought to be temporary, can result in lasting change. After the immediacy of the moment subsides, it's essential to take time to reflect and evaluate lessons learned from these experiences. Many of these quick changes 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, ecosystem members, stakeholders, 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 68% of the over \$472 billion dollars given in 2018 was from individuals. And if you count the additional 9% that came through bequests (mostly individuals leaving funds to an organization in their will after they pass), that number of individual givers grows even larger. Only 5% of donations were from corporations and 18% 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 are coming 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.

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 afterwards. 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

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

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.

This includes 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, ask some important questions, 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 are 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.





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). With our pilot libraries, some staff encountered barriers and delays in accessing the funds due to the system set up by their civic administration, and later they wished they had stored the funds with the Foundation instead. 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.

ELEVATOR PITCH

A quick, persuasive statement used to spark interest in an idea/project/program that can easily be said in the time it takes to ride an elevator (under 3 minutes).

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 other stakeholders 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

When we first visited the communities where our pilot libraries are located, 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.

All of our pilot library sites 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, 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. Some of our pilot sites used names that celebrate a place for making, like Creation Station, Maker Exchange, A-Town Create Space, and The Makery, while others were mostly about the people, such as 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.

Ponderosa Joint-Use Library
240 E. Orangewood Ave.
Anaheim, CA 92802

NAME YOUR MAKERSPACE

We need your ideas: name the new mobile makerspace program.

**NOMBRE
SU MAKERSPACE**

Necesitamos sus ideas para nombrar el nuevo programa de makerspace.

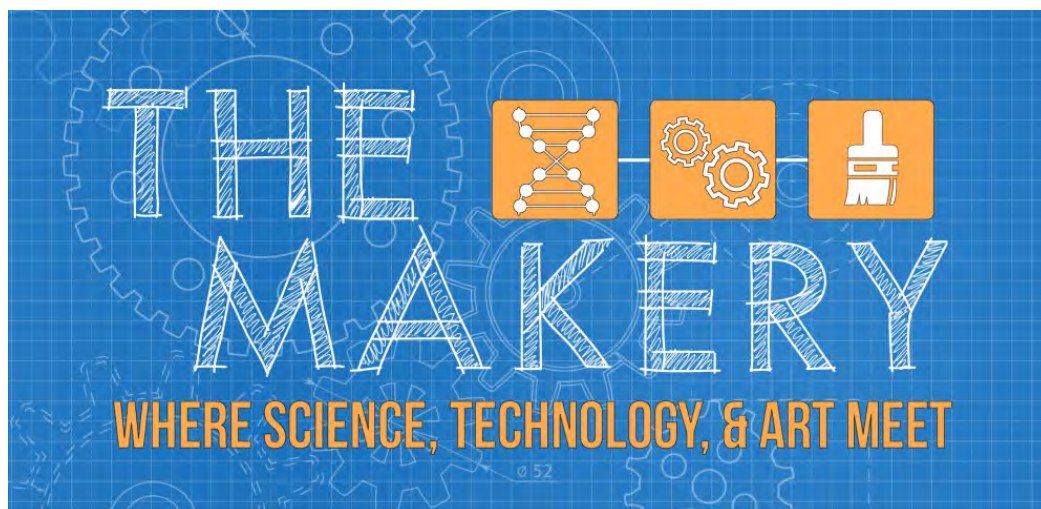
Sewing / Costura 3D Machine / Impresión 3D STEAM Robotics / Robótica Arts & crafts / Manualidades Coding / Codificación

Any person with a disability who requires an accommodation to participate in a program or service should direct such request to Library Administration, either in person at 500 W. Broadway in Anaheim, or by telephone at 714-765-1880.

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, 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.



The branding and logo for JFK Library's makerspace, The Makery, was developed by their college intern.



The makerspace program logo from the library in Atascadero, known by locals as A-Town.

Promote Your Program

First things first. Make sure your program is visibly promoted inside your own library, so patrons are clear how, where, and when to access your offerings. Are there flyers available or posters on the wall? Are examples of things patrons have made visible throughout the library?

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 to catch patron eyes or 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 or with a program like Peachjar. Remember that just because you use Facebook or your local paper to find out 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, 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 video](#) produced by The Makery at JFK Library 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 Facebook post](#) on homemade terrariums from Corona Public Library.

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 the work of your library.





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 posts and longer stories could be featured in the monthly newsletter.

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. 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. The Gilroy Library sent a press release to local media, and the paper published an article in advance of the Gilroy Mini Maker Faire. 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.

— LIBRARY PATRON IN FOCUS GROUP





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 offers 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.



From visiting the Marin City Branch Library, I understood more how a makerspace is achievable at a smaller branch like ours.

— LIBRARY STAFF

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 are 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 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. An overview of the list is below.

Educator Innovator provides an online hub for educators and organizations who value open learning and whose interests and spirits exemplify creative and Connected Learning, an approach that sees learning as interest-driven, peer supported, and oriented toward powerful outcomes.

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

Maker Education Initiative provides training, support, and resources to individuals, institutions, and communities who are integrating maker education into their learning environments.

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.

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.

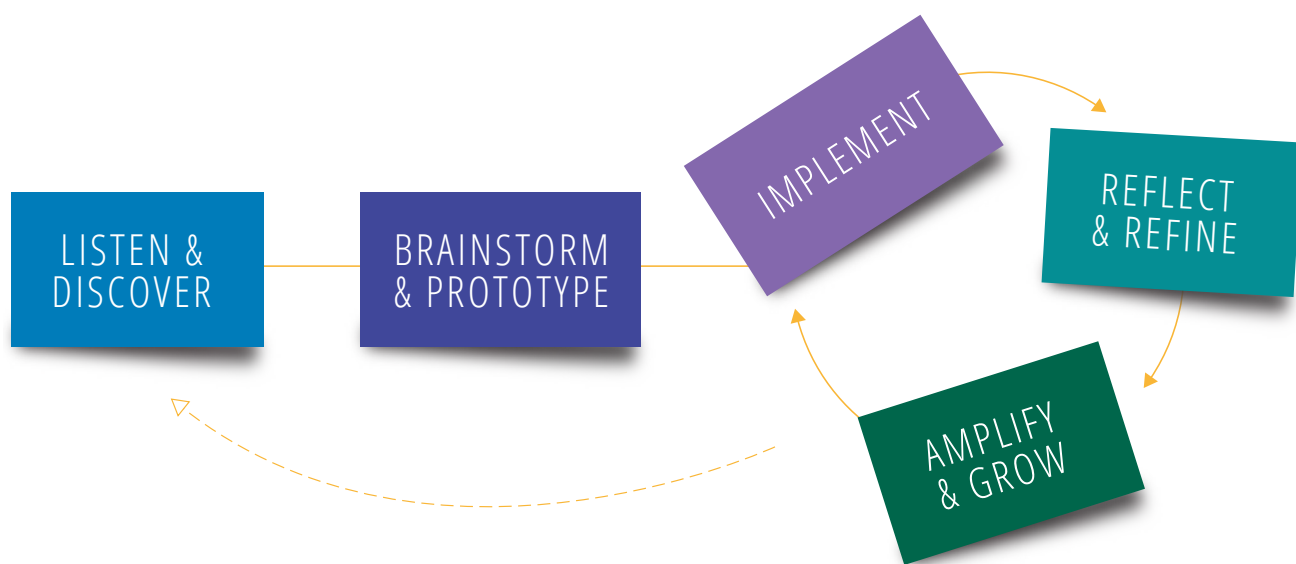
The Tinkering Studio from the Exploratorium Museum in San Francisco promotes scientific exploration through creative tinkering, and their website offers project ideas and educational resources.

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 will be benefiting from them.

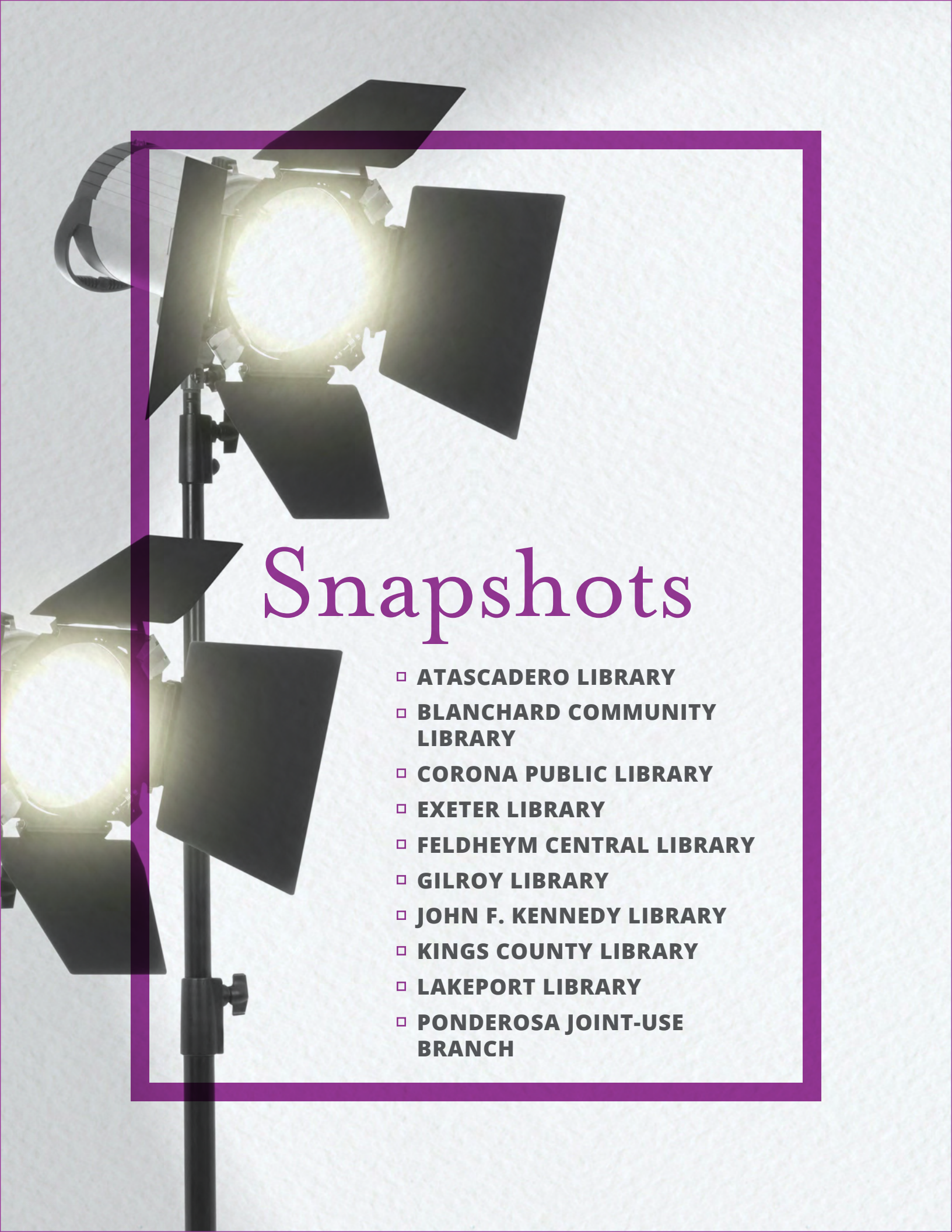
Making to Learn chronicles the creation of the Maker Lab at the Chicago Public Library including the first six months of operation and initial findings about the space and the people who visited.

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 and for tweens and teens with materials and resources for professional development, outreach, collections, and programs to successfully integrate the maker mindset into programs and services.

A Blueprint: Designing Maker Experiences for Youth from the New York Hall of Science is a resource guide for anyone interested in starting a maker program in your community.





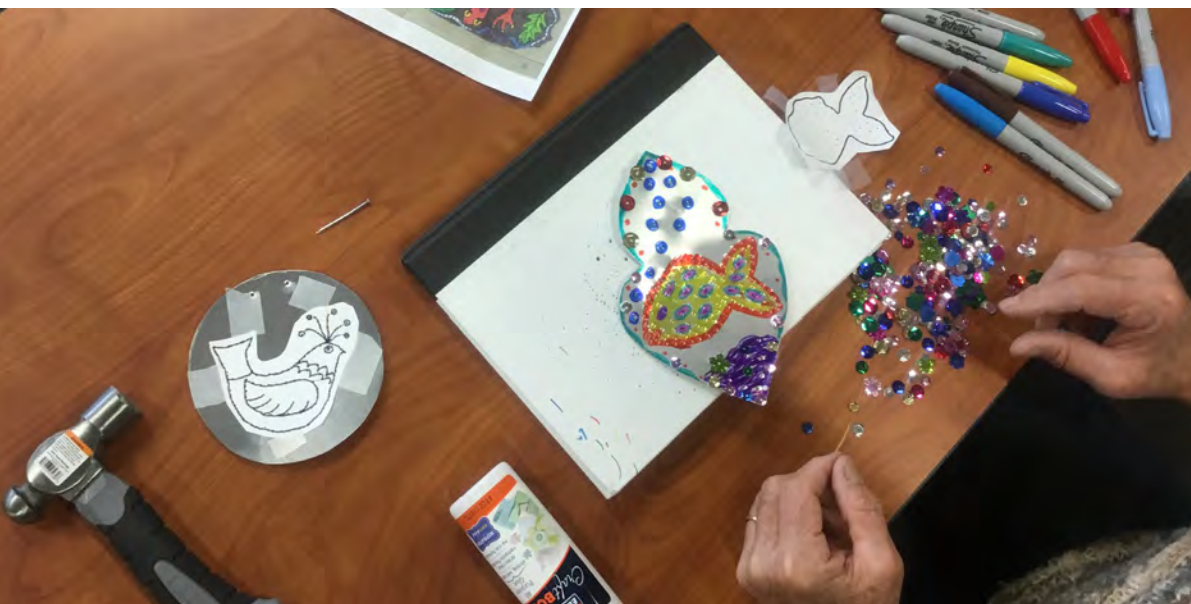
Snapshots

- **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 the youth foster a love of learning, gain new skills, and pursue their own creative ventures



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

The A-Town CreateSpace empowers teens to bring 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.

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.



STAFF SUPERPOWER

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

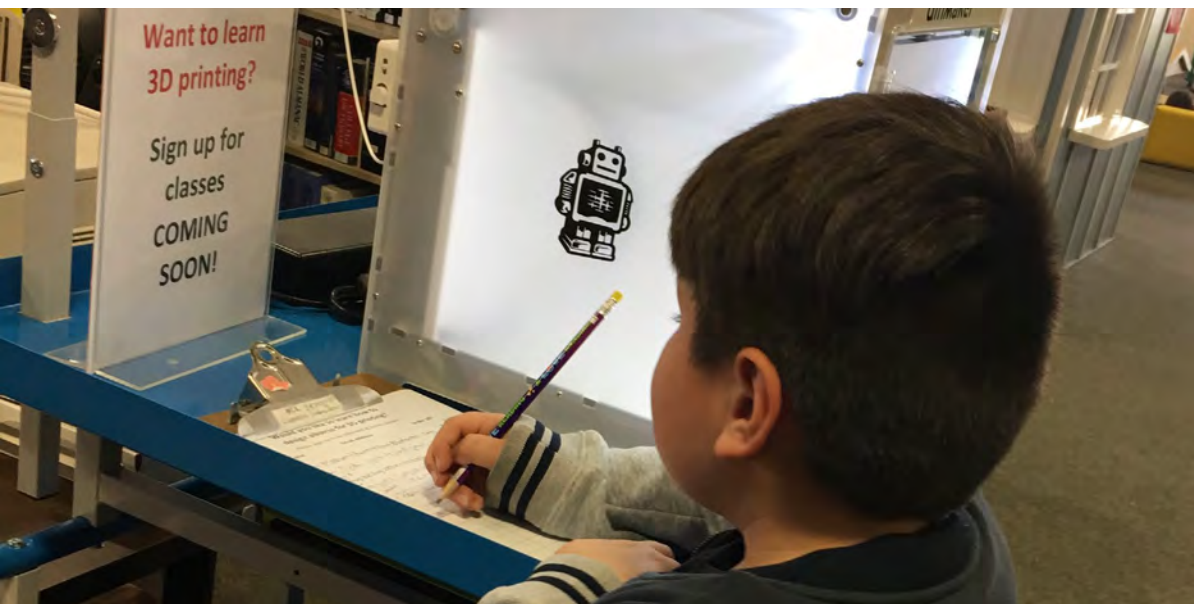
“We highly recommend finding ways to display patron work. They take great pride in completed projects.”

SANTA PAULA, CALIFORNIA



BLANCHARD COMMUNITY LIBRARY

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



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.

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 name “mobilemake” implies their flexibility in setting up the program anywhere.

mobilemake



STAFF SUPERPOWER

Staff enthusiasm and teamwork complements and encourages each others' 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



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.



STAFF SUPERPOWER

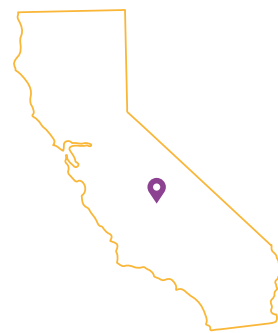
The multifaceted staff are open-minded, flexible, and have a strong background in education.

“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



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)

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.

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



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.



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 grandmothers, daughters, and grandchildren to create together, making memories and connections.



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



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)

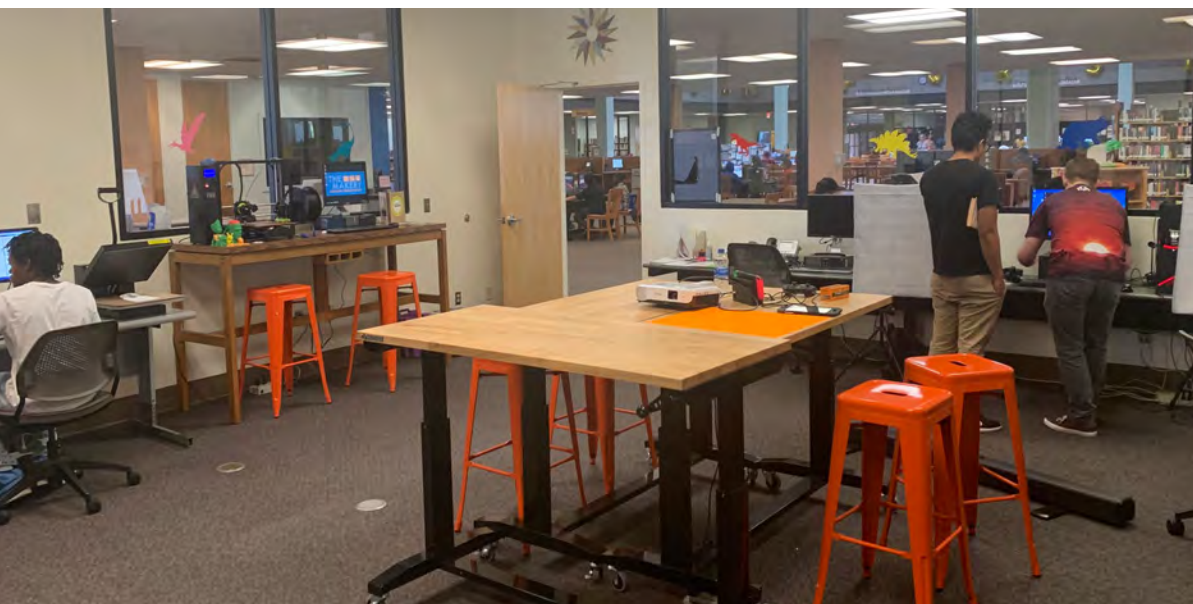
2 volunteers

POPULAR ACTIVITIES

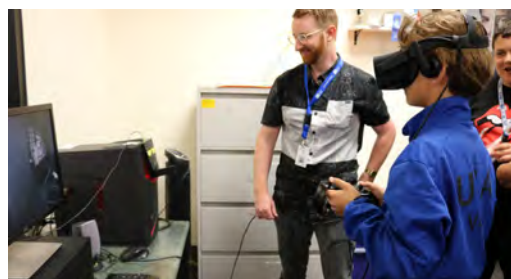
Nintendo Switch gaming, sewing, 3D design, 3D printing, and sound recording are in demand.

FAVORITE TOOLS

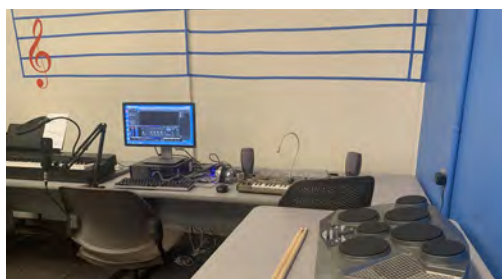
The 3D printers, Oculus Rift VR, Silhouette vinyl cutter, and sewing machines are favorites.



The Makery 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.



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



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.



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



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.



STAFF SUPERPOWER

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



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.

"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."

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 explora-
tion are big draws.

FAVORITE TOOLS

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

ANAHEIM, CALIFORNIA



PONDEROSA JOINT-USE BRANCH

Building intergenerational engagement through STEAM



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

- ▶ 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.

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.

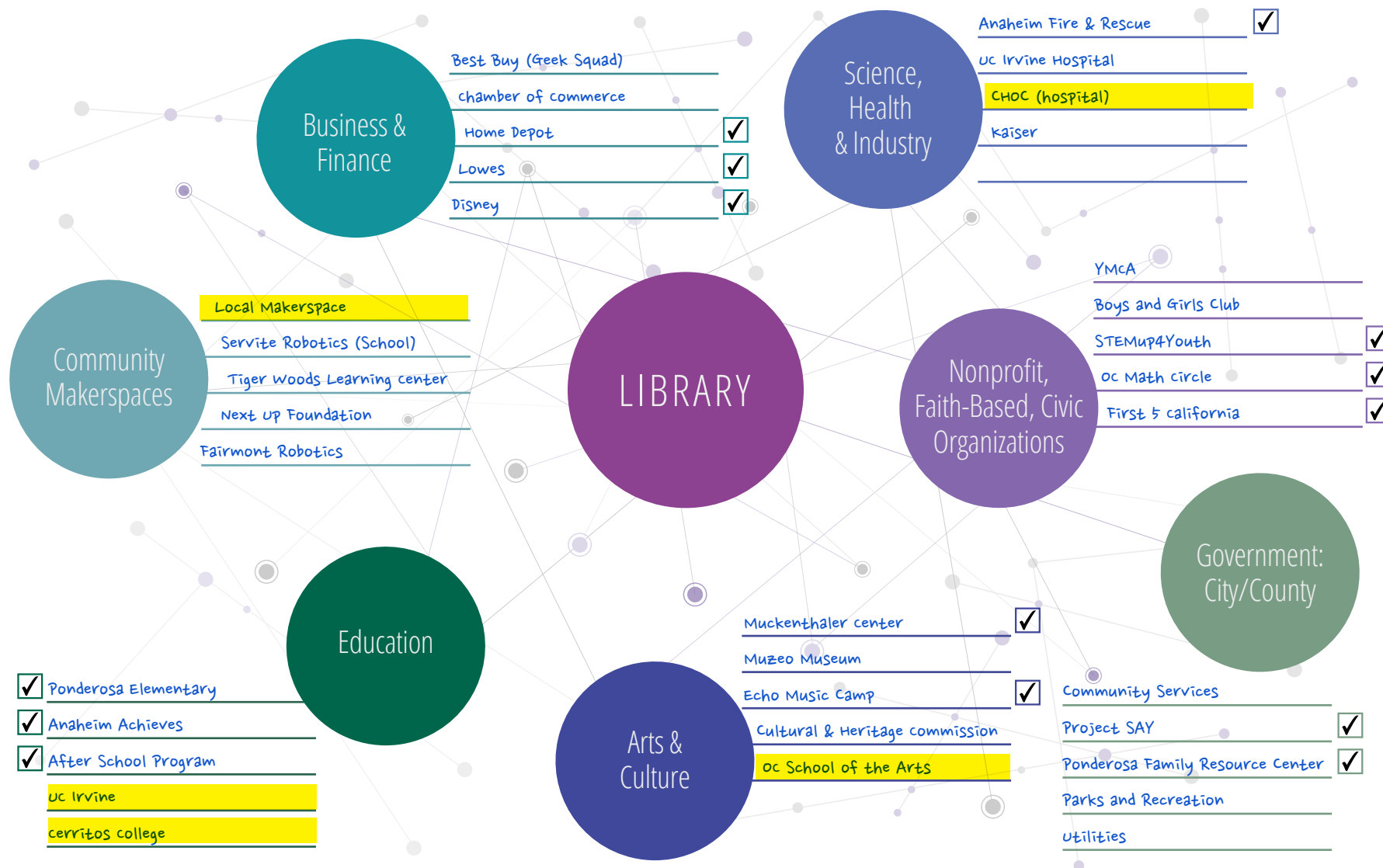
STEP 4

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 take note of the physical assets your library already has available. Mark the quantity of each item you have on hand in the box. If an item is in need of repair, add an "R" in the box.

CUTTING TOOLS

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

POWERED HAND TOOLS

Drill
Dremel
Jigsaw
Power Sander
Power Screwdriver
Router
Zip Snip Cutter

3D DESIGN AND FABRICATION

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

HAND TOOLS

File/Rasp
Hammer
Pliers
Precision Screwdrivers
Rubber Mallet
Screwdriver
Wrench

MEASURING TOOLS

Balance Scale
Electronic Scale
Measuring Tape
Ruler
Cloth Tape Measure
Thermometer

COMPUTERS

Chromebook
Desktop Computer
Game/Graphics PC
iPad/Tablet
Laptop

JOINING TOOLS

Bungee Cords
Clamps
Hot Glue Gun
Staple Gun
Vice

SAFETY/MAINTENANCE

Air Purifier
Fire Extinguisher
First Aid Kit
Fire Blanket
Safety Goggles
Shop Vac
Work Gloves

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
Lego Mindstorms
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.	Computer Lab
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 these 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, PERSON'S NAME. This is YOUR NAME calling from YOUR LIBRARY NAME. I hope that you're well.

"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 something called a makerspace. 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 DATE for 45 minutes. Do you think you would be willing to participate?"

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 you're offering, 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, PERSON'S NAME. Thank you, and I'll be in touch with an email soon."

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

FOCUS GROUP RECRUITMENT SCRIPTS CONTINUED

EMAIL INVITATION

SUBJECT LINE:

Invitation to Participate in Public Library Focus Group

BODY:

Dear [NAME],

The [YOUR LIBRARY NAME] library is in the planning stages for a 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. As a planning step, we're reaching out to [TEENS/ADULTS/CHILDREN/FAMILIES/ALL AGES] for help as we try to identify 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 [DATE] for 45 minutes. Do you think you 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 [REDACTED] focus group on [REDACTED].

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 [REDACTED]. We respect and value your time and that of other participants. We'll start right on time at [REDACTED] and we'll finish no later than [REDACTED]. We'll meet at the library in [REDACTED].

TEENS/PATRONS/CHILDREN/FAMILIES/OTHER

START TIME

END TIME

NAME THE ROOM AND DESCRIBE HOW TO FIND IT IN CASE IT ISN'T OBVIOUS

We'll serve light refreshments. The focus group discussion will be led by [REDACTED].

DISCUSSION LEADER'S NAME

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

PHONE NUMBER

INFOR DESK 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 [REDACTED] at [REDACTED]

DATE

TIME

FOCUS GROUP QUESTIONS

SAMPLE QUESTIONS FOR STAFF

- 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 (space, staffing, 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

- 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

- 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? Do you have any 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? Maker Faire? 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 . I am the at .

NAME

TITLE

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 . Are there any questions?

LOCATION

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. 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.

WHO	need/want/have
WHAT IS MISSING OR THE PROBLEM	but/despite/because of
UNIQUE ASPECT ABOUT THE PROGRAM DESIGN OR ATMOSPHERE	

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 WHO that addresses the need
NEED OR PROBLEM
 and fosters/cultivates FEELING/DISPOSITION/QUALITY?

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 safety signage/waivers?

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 partnerships are in place? How is it funded?

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 change 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).

The area underneath 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.

Pictured below is an example of an Action Plan sorted by due date.

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 2019.						
G2	Recruit at least 3 community partners to lead instruction for singular learning opportunities by March 2019.						
G3	Recruit at least 3 community partners to collaboratively develop workshops by August 31, 2019.						
G4	Formally present and request Makerspace plans to Friends Board, including the need for their storage area, by October 2018.						
G5	Prototype a maker cart and name to be used in Hangout by January 2019.						
G6	Obtain a formal quote for the construction of the new Makerspace by Feb 2019.						
G7	Synthesize prototyping data to present to Programming and Outreach staff in December 2018.						
G8	Develop and facilitate at least 2 prototype programs a month, 1 being for staff, by March 2019.						
G9	Host the soft opening for physical maker space during National Library Week, April 2019.						
GOAL	Task:	Due Date	Assigned to:	Approved by:	Completed	Notes	
G1	Request program proposal at October Friends Board meeting.	9/11/18	Dani	Kathy Wright	X		
G1	Customize in-kind/donation sponsorship letter for Makerspace project.	10/1/18	Dani	Abbie	X		
G1	Create complete needs request to present to Friends.	10/1/18	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.	10/9/18	Dani	Abbie	X		
G7	Review Needs Assessment results with staff	10/25/18	Martin V	Dani PG	X		
G7	Include presentation on P/O evaluations meeting agenda	11/16/18	Dani PG	Abigail S	X		
G4	Create floorplan for converting the existing Arts/Graphics room to first iteration.	11/30/18	Martin	Dani	X		
G7	Review prototype reports and identify common themes, conclusions, or areas of concern	11/30/18	Martin V	Dani PG	X		
G8	Find consistent method of obtaining feedback from each prototype	11/30/18	Dani PG	Abigail S	X		
G2	Schedule a meeting with Yolanda Bernal at First Five Riverside.	12/4/18	Dani	Abbie	X		
G6	Work with facilities to schedule quote	12/7/18	Dani & Abbie	Kathy B.	X		
G7	Combine general themes with specific insights gained through prototyping into a single report	12/11/18	Martin V	Dani PG	X		
G8	Include P/O staff input in new prototype designs	12/11/18	Martin V	Dani PG	X		
G5	Gather supplies and cart for partitioning of "Making Moves" Cart.	12/14/18	Martin & Abril	Dani	X	Potentially purchase a new cart.	
G5	Design the appearance of the "Making Moves" Cart.	12/14/18	Martin & Abril	Dani	X		
G9	Finalize design for existing space in Arts + Graphics room	1/31/19	Martin V	Abigail S	X		
G9	Collaborate with Friends of the Library to relocate their storage area	1/31/19	Dani PG	Abigail S	X		
G2	Schedule a meeting with Dominick Verrette at The Leela Project.	2/19/19	Dani	Abigail S	X		
G8	Develop flyers and marketing material for each prototype	3/29/19	Kristina	Dani PG	X		
G8	Design prototype activities as standalone events at our library	3/29/19	Martin & Kristina	Dani PG	X		
G8	Reserve the correct spaces for each standalone prototype activity on Activenet	3/29/19	Dani & Kristina	Michelle L	X		
G3	Schedule a meeting with Neha Arya at FutureLink	4/1/19	Dani	Dani	X	Evaluation of Fall/Winter sessions & summer proposal.	
G9	Purchase light refreshments to be served at the opening event.	4/12/19	Dani PG	Katherine B	X		
G9	Create method of inventory management and supply	5/31/19	Martin & Kristina	Dani PG	X		
G9	Remove current shelving and install more makerspace-friendly storage.	5/31/19	Dani	Brandon V.	X		
G8	Work with volunteer coordinator to procure consistent volunteers to assist with summer	5/31/19	Martin & Kristina	Madelyne P	X		
G9	Develop policies and procedures for arriving at, using, and leaving the makerspace	5/31/19	K&M&D	Abigail S	X		
G2	Develop a marketing strategy to reach CNUSD STEAM teachers.	8/2/19	Dani	Abbie	X		
G2	Develop a marketing strategy to reach Corona STEAM Academy teachers.	8/2/19	Dani	Abbie	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 seek via “Donation”.

Tools and Reusable Supplies						MAKE SELECTION	Total estimated cost for items marked "Purchase"	Actual Expense	Total estimated value of donated goods
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.						Purchase	Donation	enter manually	auto-fill
Description	Quantity	Cost / Item	Total Cost	Example	Notes				
Cutting Tools									
craft knife	1	5.50	5	Link		MAKE SELECTION	5		5
cutting mat	1	10.00	10	Link		MAKE SELECTION	10		10
craft die cutter	1	165.00	165	Link		MAKE SELECTION	165		165
hand saws	1	5.00	5	Link		MAKE SELECTION	5		5
hand chisel	1	10.00	10	Link		MAKE SELECTION	10		10
handy paper cutter	1	10.00	10	Link		MAKE SELECTION	10		10
clippers - general use (3 pack)	1	12.00	12	Link		MAKE SELECTION	12		12
clippers - hair (12 pack)	1	13.00	13	Link		MAKE SELECTION	13		13
utility knife	1	13.00	13	Link		MAKE SELECTION	13		13
						MAKE SELECTION			
						MAKE SELECTION			
Hand Tools									
pliers (3 in. set)	1	40.00	40	Link		MAKE SELECTION	40		40
hammer	1	8.00	8	Link		MAKE SELECTION	8		8
pliers	1	6.50	6	Link		MAKE SELECTION	6		6
precision screwdrivers	1	6.50	6	Link		MAKE SELECTION	6		6
rubber mallet	1	6.50	6	Link		MAKE SELECTION	6		6
trimmer set	1	15.00	15	Link		MAKE SELECTION	15		15
saw (adjustable)	1	18.00	18	Link		MAKE SELECTION	18		18
						MAKE SELECTION			
Powered Hand Tools									
drill	1	48.00	48	Link	Price for low to middle range	MAKE SELECTION	48		48
drill	1	20.00	20	Link		MAKE SELECTION	20		20
zigzag	1	49.00	49	Link	Many needs of quality	MAKE SELECTION	49		49
power sander	1	70.00	70	Link		MAKE SELECTION	70		70
power sander	1	40.00	40	Link		MAKE SELECTION	40		40
tin snip cutter	1	40.00	40	Link	price for cutting cardboard	MAKE SELECTION	40		40

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 and Safety	\$ -	\$ -	\$ -
Computing, Digital Fabrication and Media	\$ -	\$ -	\$ -
Tools and Reusable Supplies	\$ -	\$ -	\$ -
Consumable Supplies	\$ -	\$ -	\$ -
Marketing, Promo and Signage	\$ -	\$ -	\$ -
Other (specify)	\$ -	\$ -	\$ -
TOTAL	\$ -	\$ -	\$ -

MAKER ACTIVITY PLAN

Project title

One-sentence description

Recommended age group

Time needed/duration

Activity goal(s) or learning outcome(s)

Key terms/vocabulary

Prior knowledge required

Tools and materials

Materials source/suppliers

MAKER ACTIVITY PLAN CONTINUED

Advance preparation and setup

Activity instructions (or cite original source and modifications)

Facilitation notes (e.g., what to watch for, how to support creativity)

Ideas to simplify

Ideas for a deeper challenge

Recommended at our library (i.e., books, videos, programs)

Evaluation plan

MAKER ACTIVITY PLAN EXAMPLE



Project title Personalized Etched Glassware

One-sentence description

Participants use their own choice of digitally designed stencils cut on the cricut/Silhouette to transfer designs to their own glass item (cup, glass, vase, jar).

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.

Key terms/vocabulary

Etch
Stencil
Negative Space/Positive Space

Prior knowledge required

If designing and cutting with the cricut/Silhouette, general computer skills are needed and guidance with the software and machine operation.

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
- Sink area for rinsing

Materials source/suppliers

Etching cream sources:
Armour Etch purchase from Amazon, JoAnn, Dick Blick, Walmart

Stencil vinyl:
Oracal Oramask Stencil vinyl
cricut Stencil vinyl
usually found at Michaels, JoAnn, etc.

Transfer Tape
usually found at Michaels, JoAnn, etc.

Glassware: thrift stores, discount houseware stores like TJMaxx or Marshalls, Dollar Store

MAKER ACTIVITY PLAN EXAMPLE CONTINUED

Advance preparation and setup

cover tables with newspaper or a protective cloth.

Set up laptop area for digital design or pre-cut assorted stencils for those who don't want to design their own.

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.

Facilitation notes (e.g., what to watch for, how to support creativity)

- Have some examples of finished glasses available.
- Discuss the difference between negative space and positive space in the design, and how to decide which parts of the stencil to use.
- Have several interesting icons/fonts easy to access on the Silhouette/cricut software.

Ideas to simplify

use stencils with paint instead of etching cream for younger children.

Ideas for a deeper challenge

work on the vinyl design portion of the activity and bring in more complex art.

Recommended at our library (i.e., books, videos, programs)

Books on art glass or stenciling

Evaluation plan

use a survey to get feedback on future programs.

Ask participants if they would want more training on the digital design part of the activity.

Ask participants if they would like to do another stenciling activity.

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 impact 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

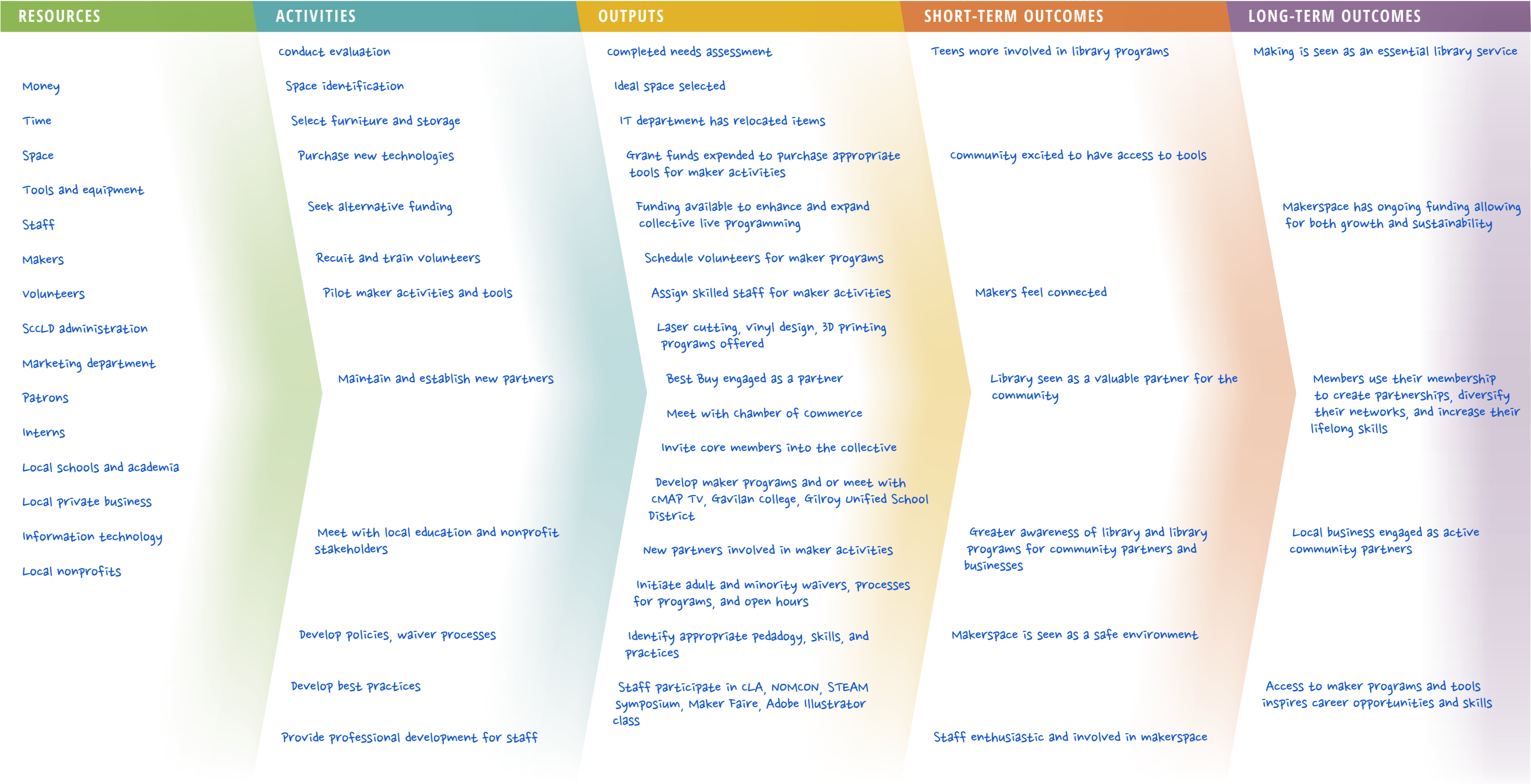
CONTINUED

FRAMING QUESTION



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?



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 gender?

Male

Female

Other (specify)

3. What is your zip code?

4. 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

5. How often have you visited the library's makerspace?

10 or more times

5 – 9 times

1 – 4 times

This is my first time

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
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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. What other activities would you like to see in the library makerspace? Please list.

9. How could the makerspace be improved? Please describe.

10. 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, set-up, 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 **9-10-2019** 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? Did they ask about returning for more programs?)

(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? I noticed:
- **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?
- **Decor:** What is on the walls, shelves, and tables?
- **Flow:** Can participants move about within the space? Can they access materials easily? I wonder:
- **Storage:** How/where are program materials stored? Is there a place for works in progress?
- **Ambience:** What's the quality of lighting? Is there music playing or a "buzz" in the room?
- **Safety:** Are there any safety requirements posted or announced verbally?

PEER OBSERVATION CONTINUED

Activity

- **Audience:** Who is the program designed for? Did they show up? Were incentives provided? I noticed:
- **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? I wonder:
- **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?

Facilitation

- **Getting started:** How do participants get started or invited to make? I noticed:
- **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? I wonder:
- **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)?

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 two and up to five 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 2020 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 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@XYZlibrary.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 STRIVING 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 are not 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 am helping to develop an intergenerational, bilingual makerspace to help children and their families develop skills in coding, science, technology, sewing, and so much more.