Welcome

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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.

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

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.

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.

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.

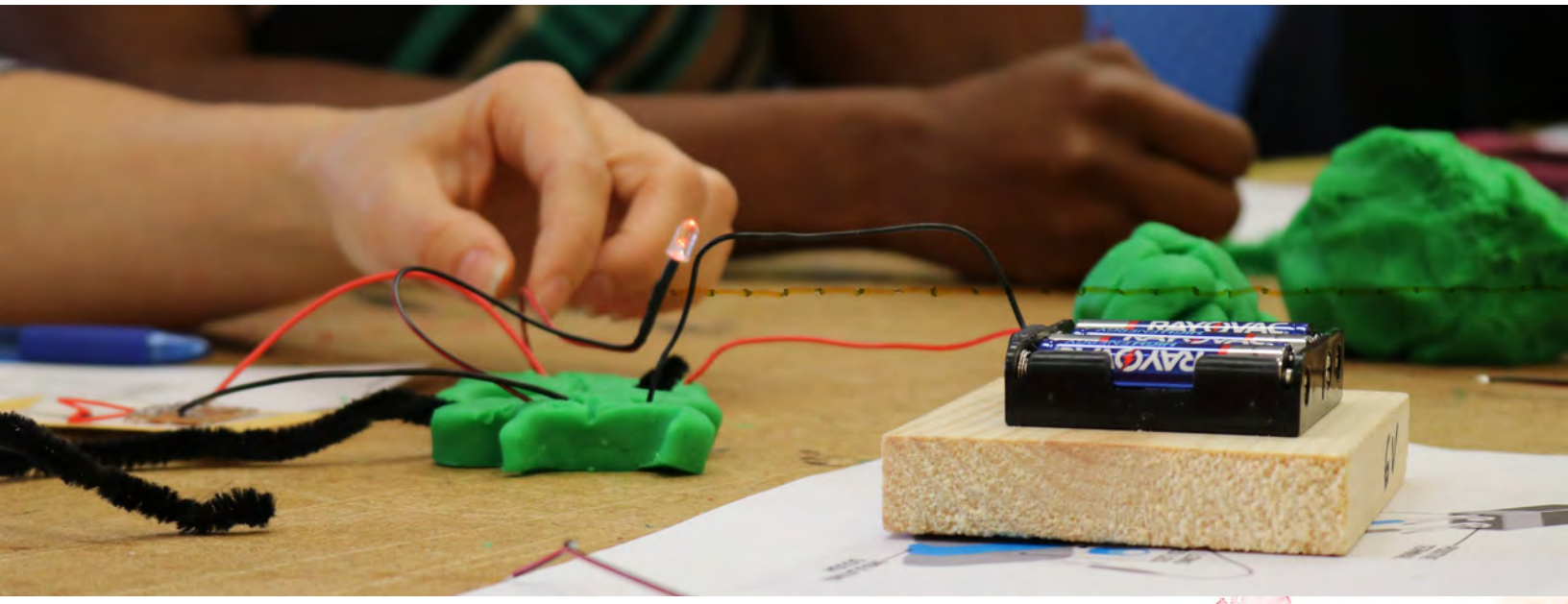
The most positive aspect of this program hasn't been the creation of a physical space but incorporating a maker mindset into programming for the public. This is much more in the spirit of what a library should be about. — LIBRARY STAFF

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 pilot library sites were spread throughout the state of California.

The origins of this toolkit are from a partnership formed in late 2017 with the California State Library, the Bay Area Discovery Museum, and Regallium Consulting, LLC, through generous funding from the Institute of Museum and Library Services. 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.

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

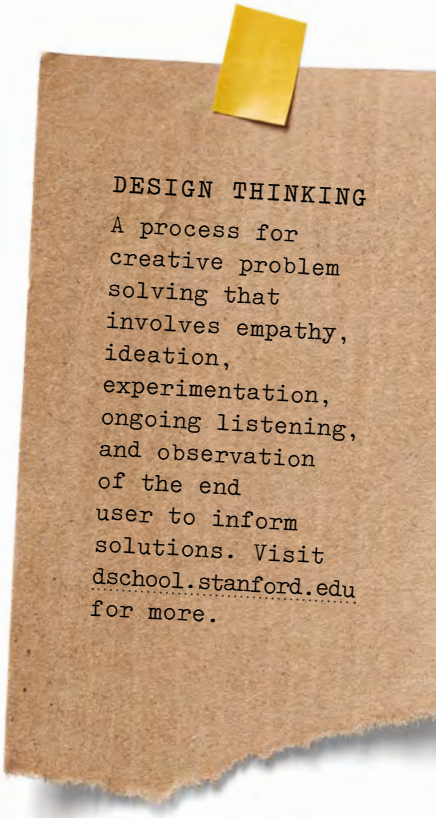
OUR APPROACH

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.



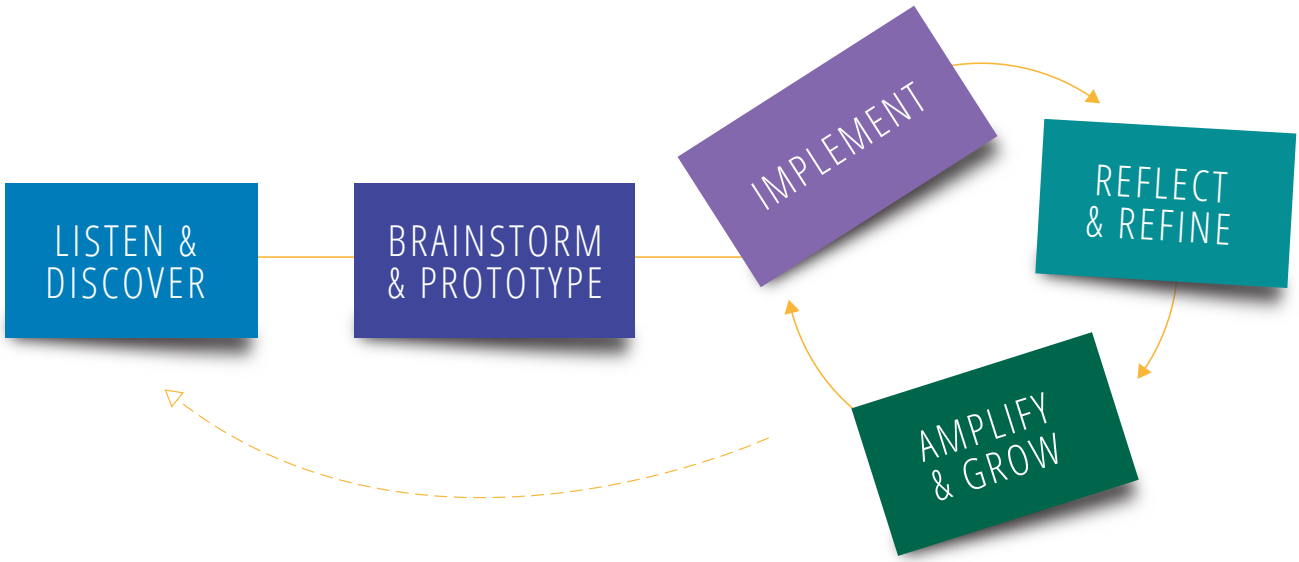
> *As a result of our makerspace, groups have seen new potential for what a library can do and how learning can happen. The space brings more people to the table.*
>
> — LIBRARY DIRECTOR

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.

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

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.



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.