



Chapter 1

INTRODUCTION

The purpose of this toolkit is to provide library educators with evidence, examples, and excitement for how they can facilitate maker-centered learning for young children, ages 2 to 6, in *any* library setting.

Based on the successful Little Makers program at New Hampshire’s Keene Public Library, the pages of this toolkit offer insight into running both in-person and virtual maker programming, with parents and caregivers playing a key role. We explore why making and tinkering are essential to early childhood development, how to approach program planning, facilitation techniques, and reflection tools.

Through sharing this knowledge, we hope to help fill the gap in resources available to librarians that take an open-ended, process-oriented, child-directed approach focused on developing the “maker mindset” more than just teaching specific STEM (science, technology, engineering, and math) concepts. A maker mindset focuses on creativity, experimentation, and open-ended problem-solving. With a maker mindset, a learner approaches a problem from various perspectives, tapping into their natural curiosity and creativity, and viewing mistakes as moments for learning and growth. The programming we offered through Little Makers helps build the foundations of a maker mindset.

Throughout the toolkit, we focus on:

- **Playful process** — Young children are capable of (and enjoy!) activities that focus on play, tinkering, and open-ended exploration rather than on creation of a final product.
- **Co-learning** — Parents, caregivers, and library educators must think of themselves as co-learners who work alongside children to guide them, rather than giving them answers or strict directions.



- **Demystifying STEM** — The acronym STEM is nothing to be afraid of! Most adults and children are already engaging in STEM learning in their everyday lives. It’s important to recognize these moments and provide children with the vocabulary and mindset they need to succeed later in life.
- **Parents and caregivers as key participants** — When planning and implementing programming for young children, parents and caregivers are, in many ways, the primary audience, and careful attention should be given to engaging and supporting them.

Using these principles as a guide, this toolkit provides several models, tools, and lessons learned that you can draw from to develop a program that best fits the needs of your library and community. Rather than offer a “step-by-step” process, we offer knowledge and examples to help you shape your own custom programming. It’s the maker way!

The Little Makers Program

Developed by the Keene Public Library, the Little Makers program provides opportunities for young children, ages 2 to 6, and their caregivers to engage in co-learning through tinkering and making activities. Little Makers is made possible by a National Leadership Grants for Libraries Program awarded by the Institute of Museum and Library Services (#LG-95-18-0191-18).

This project explores whether public libraries can provide STEM programming for very young children and their adult caregivers that results in new attitudes, skills, and competencies, fostering higher-level thinking and problem-solving skills.

ABOUT KEENE PUBLIC LIBRARY

Established in 1898, Keene Public Library (KPL) is a small but energetic library in the vibrant town of Keene, New Hampshire (population 23,281). The library’s mission is “To provide free, open, and convenient access for all Keene residents to acquire information for growth in their personal knowledge; for lifelong learning and enjoyment; for the fulfillment of informational needs, desires, and curiosities; and for enhancing quality of life in the community.”

The Youth Department staff are composed of innovative thinkers who remain dedicated to the philosophy of lifelong learning. KPL takes pride in being a certified Family Place Library, one of only two in the state! This initiative illustrates KPL’s commitment to providing specialized resources, equipment, and programs to the youngest patrons and families, in a deliberate and nurturing manner. KPL is a cherished regional resource and integral part of the cultural and educational life of the city.



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The goals of the program are twofold:

- To engage early learners ages 2 to 6 in STEM, tinkering, and making activities through early STEM library programming in an inviting environment
- To increase caregiver and parental understanding of the importance of STEM, tinkering, and making activities and to increase their efficacy in engaging their children with STEM

From 2018 to 2021, the Keene Public Library experimented by offering various programs for young children and their families, both in-person and online, that foster the roots of the maker mindset and creative thinking through making and tinkering.

The hope was that young children would:

- Have fun at the library STEM, tinkering, and making activities
- Show a capability for engaging in STEM activities
- Ask their parents how and why questions
- Begin developing a positive view of STEM

And that parents and caregivers would:

- Choose to bring young learners to the library for STEM, tinkering, and making engagement
- Increase use of appropriate scientific vocabulary and tools
- Feel more comfortable engaging their children with STEM, tinkering, and making activities
- Support their child's STEM learning
- Perceive the library as an essential STEM, tinkering, and making learning center

This toolkit represents the outcomes of this work and lessons learned.

“[Little Makers] definitely gave me an even deeper appreciation than I already had for [my child’s] capacity, from the youngest age, to understand scientific concepts.” *—Parent/Caregiver*



Using This Toolkit

One of our main goals in creating this toolkit is to offer our experience with Little Makers as a model for other librarians to use to shape their own unique programs. On the pages that follow, we share our approaches to both in-person programming hosted at the library and virtual programming for implementation at home, insights into best practices for facilitation with young children and their parents or caregivers, and a window into how you can start planning your program using some simple tools we offer.

You'll notice a few recurring features throughout. **TINY TIPS** share bite-sized bits of information particularly useful in working with very young children. **PAUSE AND PONDER** offers a resting place to digest the information you just read through—a list of questions designed for you to, well, pause and ponder!

In the **Resources** section of our toolkit, you'll find seven activities for young makers and their parents or caregivers to engage in at the library. Several of the activities also offer take-home sheets with suggestions on how to extend the learning at home. We call them "Explorations" because they are just that—loosely guided modes of exploring different materials and properties. You can use these as-is, but our hope is that you also use them as a springboard to develop your own unique explorations, designed specifically for your community. We also offer our criteria for selecting books, the Exploratorium's Learning Dimensions tool, a parent and caregiver interview guide, and a facilitator reflection form. Throughout this toolkit, you'll see these resources highlighted with a **TRY IT** callout, like the one shown here.



TRY IT!

Check out the [Criteria for Selecting Books](#) in Resources.

We hope you find the information we share to be useful and that you have as much fun reading our toolkit as we had putting it together for you!

Other Helpful Toolkits and Programs

Lastly, we're excited to add our experiences, stories, knowledge, and voice to the ever-growing knowledge base available online. Here are a few of our favorite resources, where you can glean even more insight:

- [Digital Promise](#): This organization works at the intersection of education leaders, researchers, and technology developers to improve learning opportunities for all and close the digital learning gap.
- [The Exploratorium's Tinkering Studio](#): The Tinkering Studio believes that tinkering experiences empower both learners and educators to develop an understanding of science processes and ideas, as well as their own potential as learners. In 2022, they held a multimedia virtual event, [Tinkering Together](#), that explored tinkering, making, and STEAM in early childhood.

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- [Maker Ed](#): This organization provides training, support, and resources to individuals, institutions, and communities who are integrating maker education into their learning environments.
- [Makers in the Library](#): This online toolkit provides resources and opportunities to connect with others, centered around the creation and sustainability of community-driven library maker programs.
- [Making + Learning](#): The goal of Making + Learning is to build the capacity of libraries and museums to create and sustain effective makerspaces and related programs for learning.
- [Reimagining School Readiness Toolkit](#): These research-backed resources were created by the Bay Area Discovery Museum for librarians to help families prepare children ages 0 to 8 for success in school and life.
- [Tinker Kit](#): This educator's guide is designed for museums, libraries, and early childhood settings to increase their capacity to support the optimal development of all children through intentional family-engagement activities.