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Karen Muller

Technical Services & Collection Development Manager, Hillsboro Public Library

Erica Buss

Librarian, Hillsboro Public Library

Brendan Lax

Librarian, Hillsboro Public Library

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Arduino Kits, Bakeware and LEGOs ... Oh My!

by Karen Muller
*Technical Services & Collection
Development Manager,
Hillsboro Public Library*

and

Erica Buss
*Librarian,
Hillsboro Public Library*

and

Brendan Lax
*Librarian,
Hillsboro Public Library*



Libraries have always had resources to help our patrons in their creative endeavors. We buy books with knitting patterns and DVDs that show woodworking techniques. We help connect patrons with community theater groups and direct them to online resources with the best recipe for soufflés. Now we have entered a time when libraries not only have these traditional resources, but spaces dedicated to our patrons' creativity. At the Hillsboro Public Library we've added a new dimension for supporting patrons' creativity. In addition to creative spaces, we are providing the actual tools that people need to explore new areas of interest and learn a skill.

When developing the strategic plan for the Hillsboro Public Library, support of lifelong learning was chosen as one of our top priorities. We were already doing a good job of that with our print and AV collections and our online resources. But we wanted to do more. We wanted to engage with the patrons and help them connect with each other. As we expanded and remodeled our two branches, we built in space for people to gather, including study rooms, conference rooms, and a multi-purpose room, fondly known as the "glitter and glue room," where groups could explore and create. We've had our local watercolor group come in to paint, groups of students study and collaborate on projects, and people complete Skype interviews. As we expanded services to fit these new spaces we concentrated on programs that would encourage connection between people and the library, and with the community at large.

One resource that has long fostered creativity and the "maker" spirit in children—and many adults too—are LEGOs. Assembling plastic blocks into a near-endless number of compositions allows people to explore possibilities and to fabricate tangible objects from just a picture in the mind. LEGO clubs and pro-



grams have long had a home in public libraries, extending the development of early literacy skills to include creative play, and the Hillsboro library is no exception. We have run a very successful “open” build program for a number of years, putting out thousands of blocks and letting families take over the space to participate in unstructured play together. While the initial benefit we saw was to promote tactile learning for kids who might not have access to LEGOs and DUPLOs at home, we discovered that one of the remarkable things about LEGOs is that they engage everyone—mothers, fathers, sons, daughters, teens and grandparents—and allow people to experience the simple joy of building something together. In the years since our club started, the popularity of LEGO has moved beyond just the iconic plastic block, and into the realm of electronics, robotics, and the prevailing winds of the modern maker movement. Many of the LEGO robotic kits are cost-prohibitive for a library to purchase outright, and likewise for many patrons, so we are collaborating with a local group willing to donate their time and LEGO kits to run workshops at both of our branches. With LEGO WeDo for kids ages 7+ and the more complex Mindstorm kits for the teenage crowd, we have been able to offer a fantastic fusion of tactile play and STEM-based programming, coding, and engineering. While many of our local middle and high schools do a great job offering robotic programs that let young students design and program robots, the Hillsboro library continues to offer these programs to enthusiastic audiences looking to try out some of these resources and technologies for the first time, with little pressure or demand to do more than simply let the mind express its creativity.

As part of their long-established tradition of offering new technologies to the public, many libraries are now providing 3D printers for patron experimentation. 3D printers allow people to bring their creative ideas to life. Many of the libraries that offer this technology do so in the spirit of connection, education, and innovation. Designating space for 3D printing, where people come together to collaborate, learn, and explore, aligns naturally with libraries’ historical mission as a place for everyone to have equal access to resources. At our library, in the heart of Oregon’s “Silicon Forest,” it seemed natural that we would offer this service to our community, rich with hobbyists, techies, and creatives.

With the support of our Board of Trustees and funding from the Friends of the Library, we purchased two Up! Mini 3D printers in the fall of 2014. As buzz about the printers has spread throughout the community, we’ve faced a steady stream of inquiries from patrons, fellow city workers, and the media. *How does it work? What can I do with it? When can I use it?* People are clearly curious about this new technology, and while many have heard about 3D printers, they have yet to see one up close. We are hopeful that the many inquiries we’ve received are an indication of how popular this service will be.

While the cost of 3D printers has fallen significantly, they are still out of reach for most. We are delighted to offer access to this innovative technology at no/low cost and we are drawing from our rich pool of volunteers and interns to help us do so. A local high school student and 3D printing hobbyist trained staff in using the printer and was a panelist in our Open House 3D printing demonstration that caught the attention of local and national media. Weekly 3D printing labs, begun in February 2015, allow patrons to design and print their own creations with the help of staff and volunteers. In the near future we plan to offer basic CAD classes and instruction on using open-source digital design sites such as Thingiverse. We are still in the early stages of this service roll-out and there are plenty of mistakes and discoveries ahead of us.



After seeing the success of these spaces we decided to further expand our support of these creative endeavors. But our rooms were full, and we couldn't build more. So, how could we grow? The answer was by expanding collections into non-traditional areas. We decided that if we couldn't bring more people into the library to use our space, we would find ways to provide tools for them to use at home.

Our first opportunity for a unique collection came in the form of Arduino micro-controller kits. An Arduino is a programmable circuit board that allows hobbyists to write code on their computers, upload it to the board, and see their commands direct all sorts of functions, from illuminating tiny LED lights to dictating the precise movements of a servo. These kits are essentially a modern equivalent of the chemistry sets of the past, providing programming and electronics experience to both beginners and seasoned tinkerers. Spark-Fun, a company based near Boulder, Colorado, donated a number of Inventor's Kits to our library, and we immediately decided to put them directly into the hands of our patrons. The challenge, as you can imagine, was first to catalog and process these kits, with all the tiny little components (transistors, sensors, lights, and actuators), and then to lend the kits out to the public with the hope that everything would come back in working order. The processing, while certainly a labor-intensive task, was embraced by our Technical Services staff, who saw the value this kind of resource would add to our community. We did our due diligence setting up a check-out process that would work for both our Circulation staff and our patrons, and while we considered as many contingencies as we could think of, it turns out we needn't have worried so much. 12 months and over 50 check-outs in, the kits are still going strong and haven't missed a circulation beat.

Knowing we could put a 50 piece kit into a fishing tackle box and still manage to get things back in relative order, we saw our options for special collections blossom. The next thing we decided to circulate, and something our cooperative partner, West Slope Library, had just added, was designer and European-style board games. Board games have long held the distinction of fostering the social connections between people, whether friends, families, or colleagues, and the recent proliferation of designer tabletop games has pushed beyond traditional competitiveness to include more collaborative styles of game play. As with the LEGO programs we offered, board games provided our patrons with tools for multi-generational and multi-cultural interaction, creating strategies and narratives within the game context, and opportunities to develop problem-solving and critical thinking skills while having fun. The idea that patrons could take these games with them wherever they liked—to the beach, to the bar, next to the fireplace at home—and try something that promoted creativity and social interaction in a real, physical space, fit into the priorities and values of our library. We did have some challenges figuring out how to catalog, process, and circulate these games (the last thing we wanted was for a fistful of meeples to fall into our automated materials handling apparatus!), but with the dedicated work of our volunteers and staff we have over 50 games now in circulation, and rarely do they ever find the time to sit on the shelf.

Our newest collection innovation has been to add bakeware at both branches. Our objective with this collection was to provide access to tools that not everyone would be able to obtain for their own home. Most people only need to use an *Elmo* or *Dora the Explorer* cake pan once and either are unwilling to invest the money or do not have storage space for something they may rarely use. We have added a large variety of specialty bakeware including a popover pan, madeleine pan, and an æbleskiver pan. Most of the pans are more main-



stream, like springform, bundt and tart pans, but we also have a selection of special-interest pans like *Thomas the Tank Engine*, *Darth Vader* and a Christmas wreath. Again, our technical services staff was put through their paces finding ways to process these very unusual items, but have created packaging that makes them easy for patrons and staff to track.

By collecting these kinds of pans, we're making it easier for patrons to explore specialized baking and cake decorating and we're providing a unique resource for our entire community. The bakeware collection has only been available for two months, but is off to a great start, with high turnover. As we go forward we will be adding more seasonal pans for holidays and incorporating programming centered on this collection, and we have invited patrons who borrow the pans to send us a picture of their final product for us to share on social media.

These new collections at Hillsboro Public Library have allowed us to take an active part in supporting creativity throughout our community. The tools and programs allow patrons to find new ways to express themselves, whether they spend an afternoon making a LEGO robot, print out their design on the 3D printer, make something move with the Arduino kit, or bake their very first angel food cake from scratch. The library is reaching patrons where they are—in their homes—making us an integral part of their creative lives. And who knows where we will go next? The sky's the limit when it comes to creativity. 

