Where
How
Why

MAKERSPACE
What is a library Makerspace?

The following definition from Wikipedia pretty much sums up what constitutes a library makerspace:

A library makerspace is intended to allow community members to experience technology or activities that they previously were not able to access. As many maker spaces include technology like 3D printers, sewing machines, soldering guns, coding, robotics, and wood carving machines, patrons are invited to experiment freely. The purpose of a maker space is often expressed to be inspiring an interest in science, technology, design, and life-long learning in the people who are served by the library. Over time, it is expected that the available activities within each individual maker space will grow to reflect the interests of each community in which the library is housed. Makerspaces are also intended to allow minorities or underrepresented populations, like women, or people with disabilities, to become involved with technology and fields they may not have previously considered.
Why should school libraries have a MakerSpace?

- Inquiry-based learning: Libraries have long supported student directed inquiry and Making is the starting place of a great deal of Inquiry-based learning.
- Self-directed Learners are what we want to create in schools. Makerspaces encourage students to seek out knowledge and resources on their own. To problem solve, to innovate and to collaborate.
- Students will learn perseverance in pursuit of maker challenges as well as how to utilize research tools, innovation and the assistance and ideas of others.
- Students engage in learning when it is something they are interested in. Making, Tinkering, Hacking are all showing up as ways in which students engage in meaningful learning.
- Makerspaces allow for the creation of a learning community and create a safe space in which students can pursue and share their own ideas.
- With new tools students can breathe new creative life into their school work.
- Making is a real life skill, students can engage in fields that interest them photography, movie-making, circuitry, coding, construction, design, etc..
How can I create a MakerSpace in my library?

**Start small**: Introduce a few inexpensive Maker Tools that interest your school community.

- A water-color set
- Legos
- iPads with photography and movie apps (if these are tools you already have available).
- Origami

**Set aside a “Play Time”:**

- Create a time when students are allowed to come to the library and openly “play” with the Maker Tools.
- Try to avoid making this an instructional time. Instruction can be given for tools that need it but try to reserve most of this time for open experimentation and play.
Advertise:
Make sure kids know when and where the your open MakerSpace is occurring. If you build it they will come! But only if they know about it. Posters, announcements, create some excitement.

Have enough materials for everyone to engage in some kind of making activity:
A kid who is left out because of lack of materials might not come back, but if there is another activity available he/she might try something new.

Variety is the Spice of Life:
Try to introduce new ways to use the tools you have as well as building on your Maker collection. Some of the best making comes from when kids connect different activities and innovate. Make sure to have a mix of technology and crafting tools for learners.

Add some Challenge:
Each month we create a Maker Challenge or two when we introduce new Maker Tools. This month it is to create an infographic about a topic that interests them using Canva and the Minecrafters are engaged in a homesteading challenge.
Where will I put a Makerspace? I am already using every inch of space I have for books and other resources?

Use a book truck or cart to roll out your Makerspace initially.

If you find that you want to grow your space and make it more readily available to kids you can clear some shelves of under-utilized library resources (World Book Encyclopedias, CD’s DVD’s etc.)

Utilize what you already have:
- Computer programs for building, coding, designing and apps if you have hand held devices.
- Your already existing instructional space can work great if you make tool kits that can be easily set up and stored away.
This may be your biggest challenge.

- Is there open time in your schedule when kids could come to the library to engage in making?
- Recess, before or after school? If not, could some time be carved out?
- We started with just a Friday recess but found that in order for the kids to engage in meaningful making they needed to have more access to the tools (and the library)!
- We convinced our administration and staff to be flexible and now we have MakerSpace available before school, after school and during advisor period at the end of the day for those who have advisor approval and are working on a specific Maker project.
- Getting administrative and staff buy-in is very important for the latter to work. We encouraged students to invite teachers to join them in MakerSpace time. We enlisted parent help during MakerSpace and we utilized staff that was now less pressed on the playground to come and assist in our MakerSpace.
Useful Maker Resources:
https://www.instructables.com/
www.pinterest.com/dianalrendina/makerspace-ideas-inspiration

School Library Makerspaces by Leslie B. Preddy
https://spaces.makerspace.com/playbook/
https://education.minecraft.net/
Works Cited:


How does the presence of a library Makerspace effect student engagement?
Overview of the issue: Makerspaces are cropping up all over, including in schools. Three years ago we began building one as a part of our Middle School library. It is a popular space, with students seeking out access to it during scheduled and unscheduled times. But, like many educational innovations it is a new concept that is being inserted into an old framework. In order to grow and expand our Makerspace so that it can truly function as a part of the daily educational experience of our students we need to determine if the Makerspace increases student engagement in learning when they are in school as well as when they are out of school. I would approach this by asking if students utilize makerspace tools and ideas to develop and further their learning in their school-day disciplines? How are they using these ideas and tools? And are they using the ideas and tools that they experience in Makerspace outside of the school day?
Current Research


The purpose of this study was to observe engagement of Middle School students in a school-integrated Makerspace. The author used the lens of Flow theory as a measurement for engagement. He focused on the nine aspects of flow theory, balance of challenges and skills, merging of action and awareness, clear goals, clear feedback, intense focus, paradox of control, loss of self-consciousness, autotelic experience, and loss of time. The study determined to what extent these aspects were in evidence as the students participated in the makerspace.


The author concludes in this study that Constructionism and the importance of play were very motivational to students. He noted that students naturally collaborated in a makerspace setting. He noted that the collaboration and feedback from the collaboration increased student engagement. He reported high engagement in his makerspace especially when his projects involved undirected creativity.

This literature review analyzes the finding of 43 peer-reviewed articles written about the maker approach to learning. The analysis concludes that all of the studies reported high student engagement in the making activities. The authors of the articles focused on collaboration, engagement, self-efficacy and performance. The authors of the review did conclude, however, that there was a need for “…more in depth analysis into the benefits of using a specific technological tool and analysis of the Maker Movement approach, particularly in classrooms” in order to better indicate which aspects and ingredients of “making” work better for which circumstances and student groups.
Future implications

• Making is on the increase both in and out of classrooms.
• If schools can incorporate makerspaces to allow students greater options for innovation, self-directed learning, problem-solving and technological extensions of classroom lessons, modern students may find learning more meaningful, relative and engaging.
• Innovation is driving a good deal of the modern market. Preparing kids to think like innovators increases their chances of success in an increasingly innovation-driven work force.