School Library Makerspaces

Presented by
Leslie B. Preddy
2012 AASL School Library Media Program of the Year recipient
2010 Indiana Teacher of the Year Finalist

leslieprеddy@hotmail.com

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The Phases of a School Library Making

THINK

The thinking phase is learning from the expertise and experience of others. This includes building background knowledge in order to develop a core foundation. This is the first phase of learning in order to become informed enough to develop skills, confident and eventual independence. Learning is guided learning through books, videos, blogs, websites, pathfinders, others' experiences, instructional guides, field experts, and other resources. a foundation. The Makerspace. Engaging in this inquiry ensures a foundation of knowledge in order to become a better informed maker.

CREATE

When sampling a new experience, a student need basic, hands-on, make experiences with guidance, direction and training before he begins to work and think independently. Provide the equipment, supplies and other materials necessary. Offer step-by-step instruction. The guided instruction could include live modeling, step-by-step videos, demonstrative pictures , and text to clarify creation during the guided exploratory experience.

GROW

After establishing learning and skills in a guided project, further expand the depth of learning and build from the foundation of knowledge through an independent challenge. Through an independent challenge, a student maker takes on a challenge presented by the makerspace coordinator and creates something more complicated requiring the advancement of the student's developing skills. The maker builds upon what was learned and the skills developed while creating during the guided exploratory experience. More in-depth books, videos, blogs, websites, and other resources are provided to expand learning, as well as an opportunity for independent research. Step-by-step instructions are NOT included, therefore a student must do the problem solving for himself through trial and error, experimentation, and practice as well as further research on the topic, in order to successfully complete the make.

SHARE

Integral to the maker philosophy is the value of being engaged in the globally and contributing to the world of maker experiences. This can be accomplished through the development and sharing of instructional how-to's in a variety of formats, pathfinders, mini-Maker Faires, and mentoring other makers. Sharing can also be about making connections to the community and service learning: contributing completed makes or advancing makes to meet the needs , project or events of the community.

*Learning Standards & Program Guidelines", American Library Associa on, September 12, 2012. <h p://www.ala.org/aasl/standards-guidelines> Document ID: 25d01915-3118-a204-c983-9b7aba977255>

The Growth of a Maker

Building understanding as a maker means artistic flexibility while learning from experts by reading, seeing, and consulting before doing, contributing and sharing.

Phase 1: Learning and Building Knowledge

Before student makers can become independent, they need guidance, direction, and training. Often, students need a developmental, lower level, basic skills experiences to broaden their horizons, develop a core base of skills, and learn about things they otherwise may not even know exist.

Phase 2: Independence and Challenge

Once a student has established basic skills through a guided project, she is ready for an independent challenge. In a challenge task, a student takes what has already been learned to further develop related skills and deepen knowledge on the subject through research and completing another make presented by the makerspace coordinator. The challenge is phrased as a task with a final goal in mind, as well as some recommended, preliminary resources. From there, it is up to the student to work out what steps are necessary, develop a plan including the tools and supplies required, to experiment, and to successfully take learning to the next level to successfully complete the make.

Phase 3: Self-Directed Experimentation

Key to the evolution of successful learning and development as a maker is a self-directed make. At this phase, the student is ready to set an independent project goal. Learning continues through personal inquiry, designing and creating a product of personal choosing and creating through creativity, inventiveness, experimentation, further development and improvement of skills, and trial and error.

*Preddy, Leslie. School Library Makerspaces: Grades 6-12. (Libraries Unlimited, 2013)

lesliepreddy@hotmail.com Leslie Preddy www.lesliepreddy.com

AASL 16th National Conference – *School Library Maker Space* – Saturday, November 16, 8:00-9:15am

School Library MakerSpace PathFinder

A makerspace is an evolutionary step in library facilities design and programming. It is a destination for thinking, learning, doing, creating, producing and sharing; a space which takes advantage of multiple learning styles. It is a place to reinvent old ideas with new conceptual frameworks, utilize advancements in thinking and doing, and investigate and construct a hybrid of fine arts, sciences, crafts, industrial technologies, foods, inventions, textiles, hobbies, service learning, digital media, upcycling, STEM/STEAM, and DIY (do it yourself) and DIT (do it together) concepts. In this space which can be physical and virtual the intersection of formal and informal learning can include designing, playing, tinkering, collaborating, inquiring, mentoring, experimenting, problem solving and inventing. Through actively engaging in the Makerspace patrons take command of their own learning with the potential for demonstrating entrepreneurial behavior. Every library makerspace is unique and always in transition. (Derry, Loertscher, Preddy ©2013)

BOOKS and RESOURCES

Preddy, Leslie. School Library Makerspaces: Grades 6-12. (Libraries Unlimited, 2013)

ALA TechSource. Archive of Makerspaces. Webinar series, 2012-2013. <http://www.alatechsource.org/search/node/archive%20of%20makerspaces> A four part webinar series, *Makerspaces: A New Wave of Library Service*.

Anderson, Chris. Makers: The New Industrial Revolution. (Crown Business, 2012)

Makerspace Team. Makerspace Playbook School Edition. <http://makerspace.com/?s=school+edition>

Martinez, Sylvia L., & Stager, Gary. Invent to Learn: Making, Tinkering, and Engineering in the Classroom. (Constructing Modern Knowledge, 2013)

"The Makings of Makerspaces" series, Library Journal/School Library Journal(via The Digital Shift). <www.thedigitalshift.com/2012/10/public-services/the-makings-of-maker-spaces-part-1-space-for-creation-not-just-consumption/>

PINTEREST

"Follow" the Pinners/Boards
http://www.pinterest.com/

Leslie Preddy - Follow the LibraryMakerspace Boards

AASL (American Association of School Librarians)

Babble - Follow a range of their Boards

eHow - Pinner to Follow

School Library Journal– Follow the STEAM Board

Whitewater Makerspace - Pinner to Follow

THINKING and DOING and SHARING

DIY <https://diy.org/skills>

Howtoons <http://www.howtoons.com/>

Instructables <http://www.instructables.com/>

MAKE Projects <http://makezine.com/projects/>

NOVA: Making Stuff – Education Collection <http://goo.gl/1nIYj2>

Purdue University: Indiana 4-H Youth Development <http://www.four-h.purdue.edu/projects/index.cfm>

BUDGETS, FUNDING, FUNDRAISING

- Garcia, Lopez. "6 Strategies for Funding a Makerspace." Edudopia, September 5, 2013. <http://www.edutopia.org/blog/6-strategies-funding-makerspace-paloma-garcia-lopez>
- Grant Wrangler®: Stem Grants and Resources <http://www.grantwrangler.com/STEMresources.html>
- High School Makerspace Tools & Materials. Makerspace, April 2012. <http://makerspace.com/wp-content/uploads/2012/04/hsmakerspacetoolsmaterials-201204.pdf>
- Hlubinka, Michelle "Binka". "Funding School Makerspaces." Make, September 5, 2013. <http://makezine.com/2013/09/05/funding-school-makerspaces/>
- Institute of Museum and Library Services <http://www.imls.gov/>
- Preddy, Leslie. School Library Makerspaces: Grades 6-12.
- STEMgrants.com <http://stemgrants.com/>

WORDS TO KNOW

3D Printing
Apps
Arduino
Cloud Computing
Coding
Creative Commons
Digital Badge
DIY Couture
E-Textiles
Fabrication
Foodcrafting
Instructable
Laser
Make and Take
Maker Faire
MakerBot®
Makey Makey
Micro-Manufacturing
Open Source
Play
Prototype
Raspberry Pi
Robotics
Soft Circuit
STEM/STEAM
Storyboard
Upcycling
Wearables

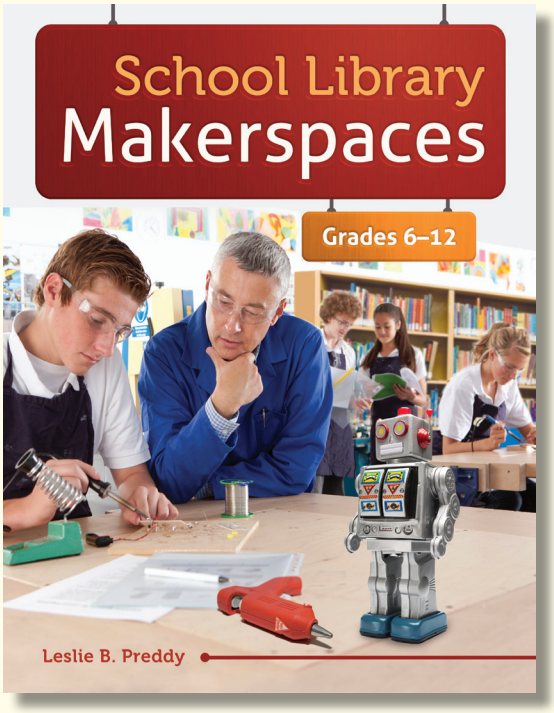
STANDARDS and LEARNING

Common Core: State Standards Initiative. <http://www.corestandards.org/>

Coy, Andrew. "Maker: Common Core Curriculum" Google Docs. Digital Harbor Foundation <http://goo.gl/KBpLrS>

"Learning Standards & Program Guidelines", American Library Association, September 12, 2012. <http://www.ala.org/aasl/standards-guidelines> Document ID: 25d01915-3118-a204-c983-9b7aba977255>

"Learning4Life", American Library Association, September 6, 2012. <http://www.ala.org/aasl/learning4life> Document ID: 04376c42-4519-56f4-91e5-74a8553d5320>



SCHOOL LIBRARY MAKERSPACES

Grades 6-12

Leslie B. Preddy

The roles of school library media specialists and school libraries themselves are ever changing in response to the needs of the community and the evolution of human thinking, interaction, and learning processes. A school library makerspace can provide patrons with a place for learning, doing, and creating. It offers a location for tackling inventions, fine arts, crafts, industrial technology, hobbies, e-textiles, foodcrafting, DIY couture, fabrication, upcycling, and STEM right in the middle of the information gateway—the library. This book completely explains the makerspace concept and supplies real-world implementation guidance and inexpensive programming ideas that can be used as-is or adapted to suit a specific library or community's needs. Readers will be able to hit the ground running to implement their own makerspace with practical project ideas they can put to use immediately.

October 2013, 193 pp., 8 1/2 x 11
ISBN 978-1-61069-494-0, ~~$45.00~~ ~ **$36.00**
Also available as an eBook. Please call for pricing.

An essential resource for intermediate, middle, and high school librarians that guides the planning, learning, and implementation of a school library makerspace.

Leslie B. Preddy has been the school librarian at Perry Meridian Middle School in Indianapolis, IN, since 1992. She is a past recipient of AASL's Collaborative School Library Media Award and School Library Media Program of the Year.