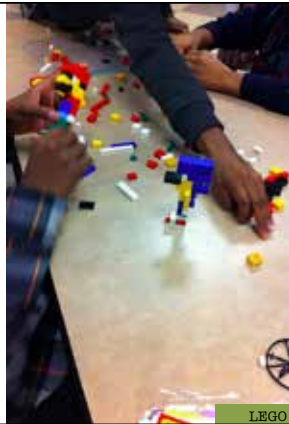


BUILDING MAKERSPACE CULTURE IN LIBRARIES

Kristin Fontichiaro
University of Michigan
School of Information
@activelearning

CECA-CASL 10/20/2014, 1:00 - 1:55pm

Download today's slides:
<http://bit.ly/fontblog>

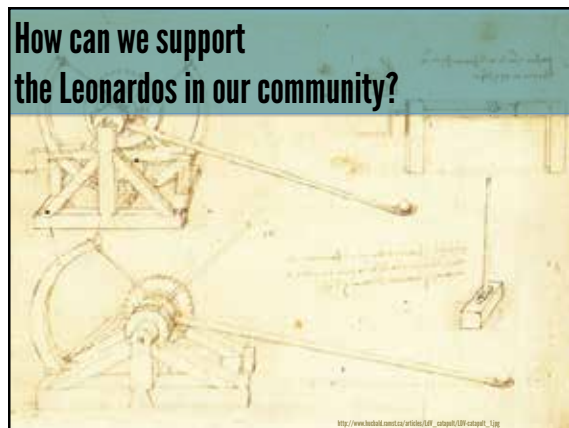


Hacking Fashion: T-Shirts

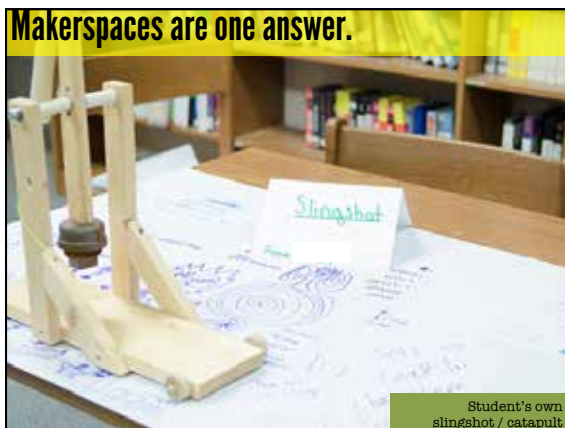
Slides & List of Maker Activities
<http://bit.ly/fontblog>

<http://bit.ly/fontblog>

INVENT TO LEARN
MAKING, CREATING, AND LEARNING IN THE CLASSROOM



How can we support the Leonardos in our community?



Makerspaces are one answer.

Student's own slingshot / catapult

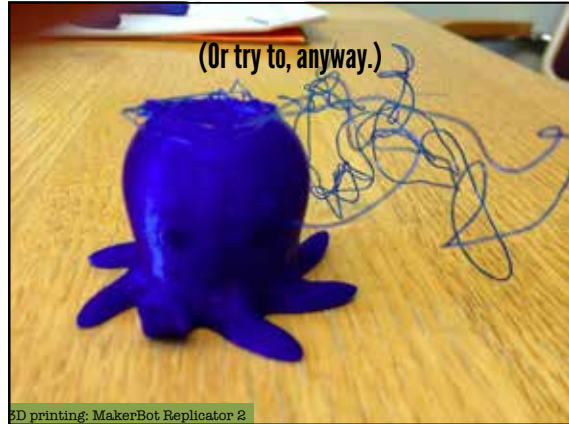


Makers Make Stuff.



Art Museum, Victoria, British Columbia, Canada. CC BY-SA. http://commons.wikimedia.org/wiki/File:Vitruvian_Man.jpg

**Makers
Transform
Stuff.**



(Or try to, anyway.)

3D printing: MakerBot Replicator 2



This is a makerspace.



This is, too.

Photo: Bill Burt, Bill Burt <http://www.creativecommons.org/licenses/by/2.0/>



And so is this.

Photo: Michael Burt, Bill Burt <http://www.creativecommons.org/licenses/by/2.0/>



And this.

Photo: Michael Burt, Bill Burt <http://www.creativecommons.org/licenses/by/2.0/>



This, too.

Parker Thomas,
<http://makezine.com/2013/08/11/key-qualities-for-a-school-makerspace/>

Tools
 +
 Support
 +
 Community

People
 +
 Process
 +
 Place

Dale Grover, Maker Works, Ann Arbor, Michigan

Parker Thomas,
<http://makezine.com/2013/08/11/key-qualities-for-a-school-makerspace/>

Tools
 +
 Support
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 Community

People
 +
 Process
 +
 Place

EXPLORATION + FORMAL AND INFORMAL LEARNING + PEER LEARNING + EXPOSITION

Dale Grover, Maker Works, Ann Arbor, Michigan

All this for 15 cents—
300 New Ideas
 300 New Pictures!

Do you know—
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 The new way to...
 The new way to...
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Making isn't new ...

http://upload.wikimedia.org/wikipedia/commons/0/04/Popular_Science_Monthly_1916_Ad.jpg



Image: <http://radicalhorizon.wordpress.com/2013/01/09/is-conceptual-art-removing-the-need-for-skill-in-todays-art-world/> Public domain.





Our makerspaces hit the mark when makers are working from their “center of gravity”

(Dewey 1900)



RULES OF THUMB FOR MAKER SUCCESS



3D printing: MakerBot Replicator 2

#1: Know Your Purpose: Your “Spine.”

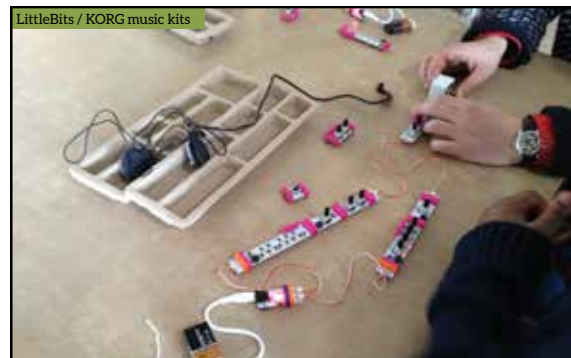
Entertain? Educate?
 Enhance academics?
 Fill a void in academics?
 One-off faddish projects?
 A community?
 Welcome new makers?
 New services for existing makers?

Squishy Circuits



Example: Michigan Makers

- Create community around making
- Balance DIY exploration with guidance from mentors
- Create sustainability and replicability
- “Have something for every member of the family”
- Welcome female makers



#2: No two makerspaces are the same.



#3: Embrace Open Source Thinking.



#4: Partner (Don't Compete) with Others.

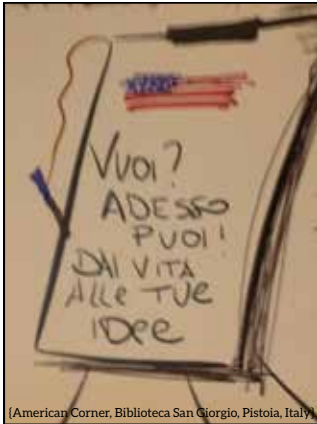


Corollary: Partner Skills, Too: Look For Mashups.



#5: Cast A Wide Net. Welcome All Kinds Of Making.





Want to?
Now you can!
Give life to your ideas

[American Corner, Biblioteca San Giorgio, Pistoia, Italy]



We intentionally plan activities that appeal to both genders.

Sewing machine orientation project: bean bags

[Surprise! Boys like sewing machines more than girls do.]



Corollary: Sometimes, making allows for self-soothing and re-centering.



Fingerless Gloves by Grace from upcoming *Hacking Fashion: T-Shirts*

"You need to be making something"

LED + battery + marker + tape = flashlight



#6: Match Mentors With Learners.

Programming



In Michigan Makers... you are free to use your creativity in coming up with your own creations.

But it's much more than that. Along the way, you learn about teamwork and problem solving.

You meet other people who have completely different brains and ideas and thoughts, and who have the same interest in making that you do ...

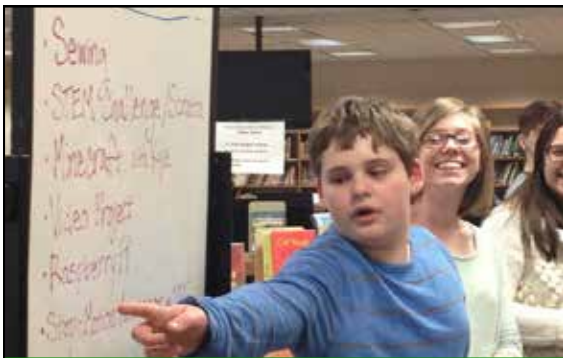
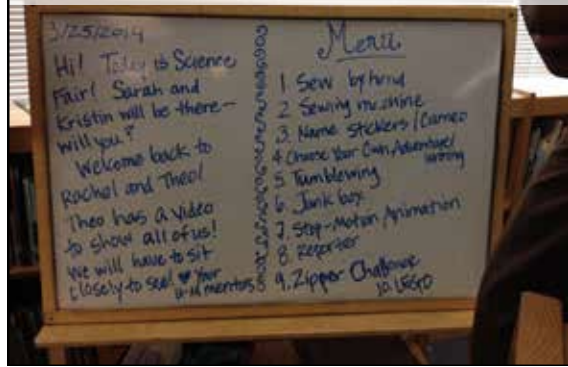
The [graduate] students encouraged us to step out of what we were used to doing. They taught us by guiding us, then letting us figure things out on our own and solve problems in our own way.

Corollary: Redefine "Teacher" And "Learner."



Game-making with Scratch

#7: Think Windows And Mirrors.



#7: DEVELOP PEER LEADERSHIP.

#8: CONSIDER SHORT- AND LONG-TERM PROJECTS.



Shrinky Dinks + Rainbow Loom = Leveling our Kids' Creative Playing Field

#8: Celebrate Daily Progress.



MyCreate Stop-Motion Animation

#9: Celebrate Long-Term Progress.



Student's personal robot kit

Upcycling/Hacking T-shirts

Corollary: Celebrate By Just Making Something.

Arduino Microcontrollers

#10: 7 S's of Planning

Who is it all for? What do they want/need?

- Students/patrons
- Stamina
- Support
- Sherpas
- Space
- Storage
- Stuff

(Range & Schmidt 2014)

A mentor upgrades his computer's RAM

#10: 7 S's of Planning

How much can you take on and sustain?

- Students/patrons
- Stamina
- Support
- Sherpas
- Space
- Storage
- Stuff

(Range & Schmidt 2014)

It's a great day to learn something

Make an exciting discovery @ your library!

#10: 7 S's of Planning

Who will support you w/ budget, PR, admin.?

- Students/patrons
- Stamina
- Support
- Sherpas
- Space
- Storage
- Stuff

(Range & Schmidt 2014)

Snap Circuits

#10: 7 S's of Planning

Who already does this kind of work and can mentor you?

- Students/patrons
- Stamina
- Support
- Sherpas
- Space
- Storage
- Stuff

(Range & Schmidt 2014)


Programming

#10: 7 S's of Planning

Where in your facility will you set this up to promote community-oriented, collaborative making?

- Students/patrons
- Stamina
- Support
- Sherpas
- Space
- Storage
- Stuff

(Range & Schmidt 2014)




#10: 7 S's of Planning

Students/
patrons
Stamina
Support
Sherpas
Space
Storage
Stuff

(Range & Schmidt 2014)

Where are you going to put it all away?

LEGO + Zipper Challenge



#10: 7 S's of Planning

Students/
patrons
Stamina
Support
Sherpas
Space
Storage
Stuff

(Range & Schmidt 2014)



#10: 7 S's of Planning

Students/
patrons
Stamina
Support
Sherpas
Space
Storage
Stuff

(Range & Schmidt 2014)

What are you going to buy, with or without a 3D printer?

Design a board game




Project Runway refashioning challenge: LED bulbs + thrift store shirts

Join us! We're still learning, too.
<http://makerbridge.si.umich.edu> - @makerbridge
created by Sharrisa Ginsberg

Named a "Top 10 Series Nonfiction" by *Booklist*, 4/1/2014
"Here's a series many librarians need as much as their readers ... the volumes in this cutting-edge series communicate a level of energy that elevates the challenging material into need-to-know-right-now stuff."

QUESTIONS?

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@activelearning
<http://bit.ly/fontblog>



SPRING 2015