



Making Maker Learners

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Slides available tonight:
<http://bit.ly/fontblog>

UMSI Engagement Center
Sat., 3/28/2015, 10am – 5pm

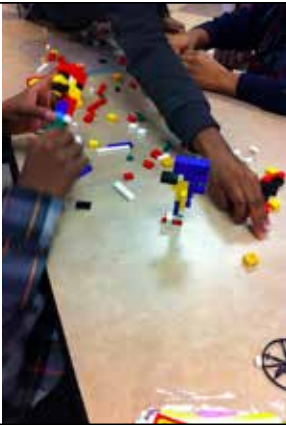
10am – 1pm
Exploring the Big Ideas of Making with K-8 Students

1-2:30pm
Zingerman's Lunch; time to chat or do DIY


2:30 – 4:30pm
Hands-On Making

4:40 – 5:00pm
Reflection & Closure

Today's Agenda



<http://bit.ly/uploads/2015/makerspace-list.pdf>



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



String + Pencil + Index Card = Our Opening Activity

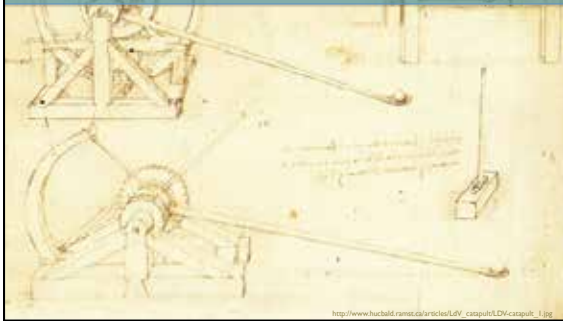


What'd You Make?



"Dogfooding"

How can we support the Leonardos in our communities?



Makerspaces are one answer.



Makers Make Stuff.



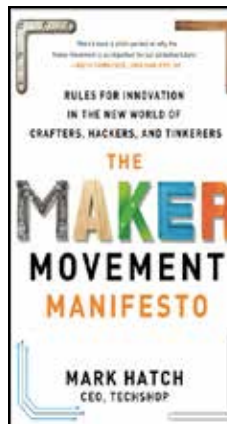
Makers Transform Stuff.



Making isn't new ...

(Author is selling reading material based on its pictures and readability!)

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

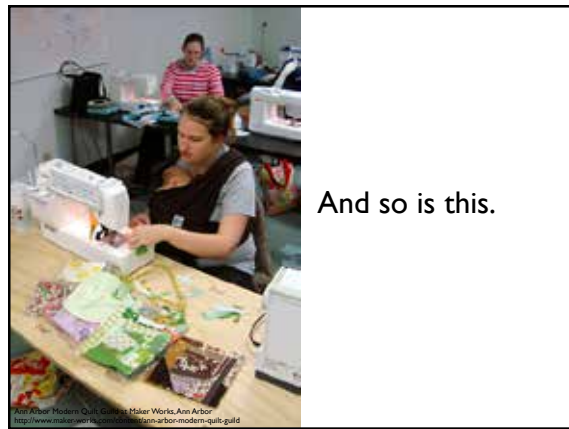


<http://bit.ly/makermanifestochapter>

MAKE
 Making is fundamental to what it means to be human. We must make, create, and express ourselves to feel whole. There is something unique about making physical things. These things are like little pieces of us and seem to embody portions of our souls.

LEARN
 You must learn to make. You must always seek to learn more about your making. You may become a journeyman or master craftsman, but you will still learn, want to learn, and push yourself to learn new techniques, materials, and processes. Building a lifelong learning path ensures a rich and rewarding making life and, importantly, enables one to share.

<http://bit.ly/makermakerschapter>



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/>

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EXPLORATION + FORMAL AND INFORMAL LEARNING +
 PEER LEARNING + EXPOSITION + CONTENT?



(American Corner, Biblioteca San Giorgio, Pistoia, Italy)

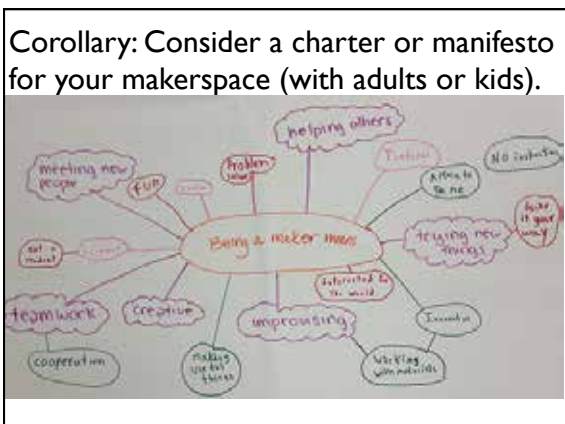
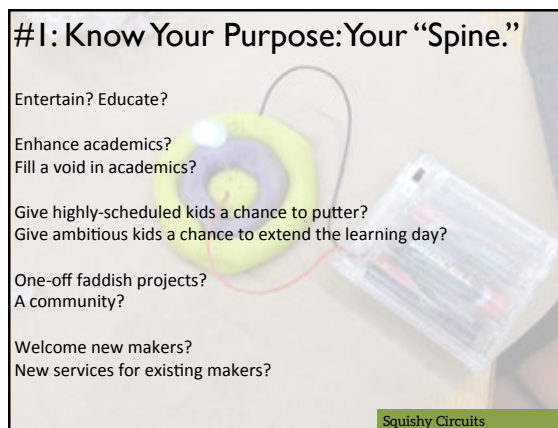
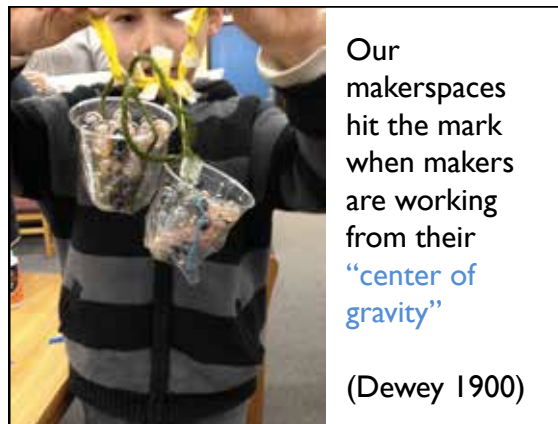
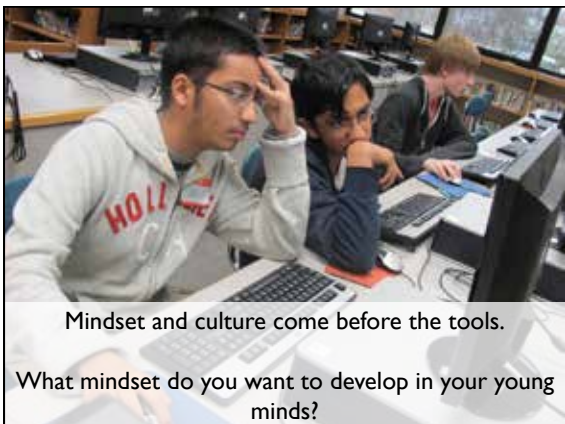
Want to?

Now you can!

Give life
to your ideas

No Two Makerspaces Are The Same.







#2: Embrace Open Source Thinking.



Arduino Uno R3 by SeeFur Electronics on Flickr. CC-BY.
<http://flickr.com/photos/see4fun/840646580/>
 Seeseduino v3.0 from Seeseduino.com

Arduino & Seeseduino Microcontrollers

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

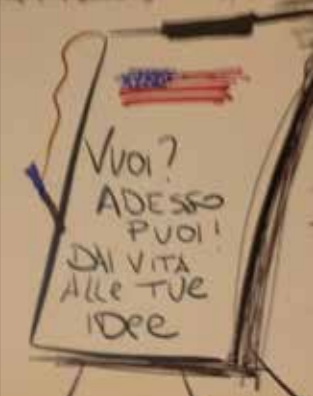


Corollary: Partner Skills, Too: Look For Mashups.



#3: Cast A Wide Net. Welcome All Kinds Of Making and Makers.





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


#4: Match Mentors with Learners.



Marshmallow Towers



Egg Drop Challenge



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.”**



#5: Think Windows And Mirrors.

There is something missing in our definition, vision, of a human being: the need to make.

We are creatures who need to make.

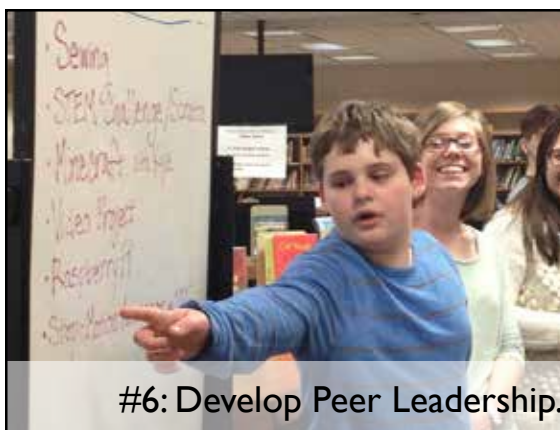
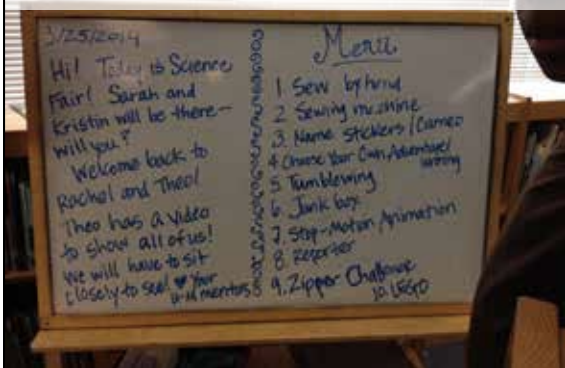
Because existence is willy-nilly thrust into our hands, our fate is to make something--if nothing else, the shape cut by the arc of our lives

Making is the mirror in which we see ourselves ...

Frank Biedart, "Advice to the Players," <https://harvardmagazine.com/1999/10/poetry.html>



#5: Think Windows And Mirrors.



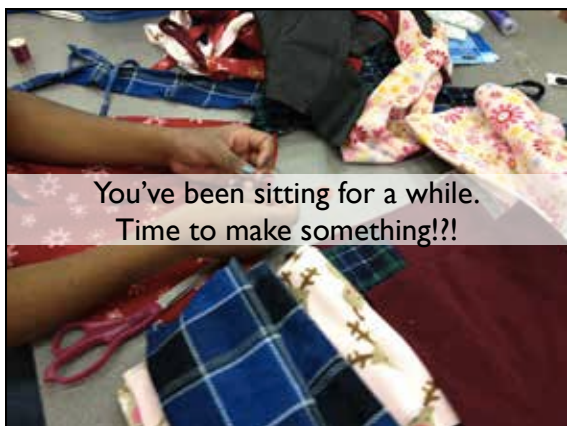
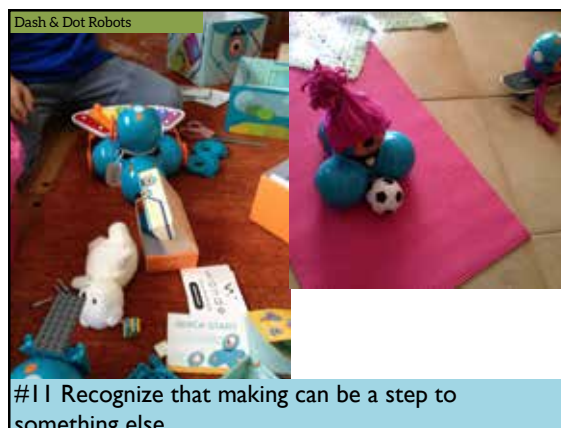
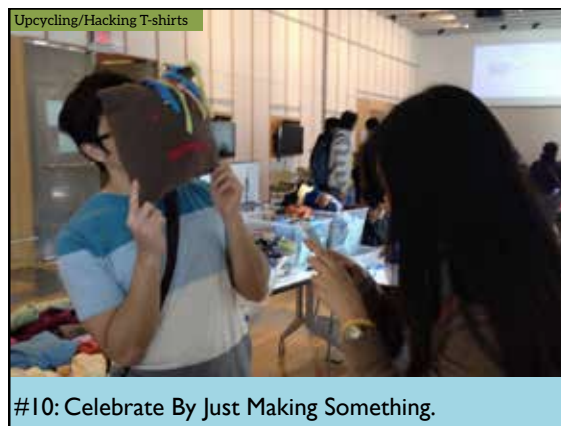
#6: Develop Peer Leadership.

#7: Consider Short- And Long-term Projects (and start small).



#8: Celebrate Progress: Daily.





Design Challenge #2: Design a Board Game
an activity designed by Scott Nicholson, Syracuse iSchool
As described by Brian Mayer here:
<http://www.americanlibrariesmagazine.org/blog/make-game>

The game? Michigan Mania.

The rules? Take turn spinning the die and moving the correct number of spaces. First to the end wins.

Sound boring? Hack it!

Add a few rules as situations arise ...

- Do any spaces on the game board have special attributes or cause anything to happen if you land on them? Do you need more/different places/paths on the board?
- What happens if you land on a space already occupied by another player?
- What happens if you roll a certain number on the die?
- Do you need to role the exact number on your die that it takes to reach the end?
- What's the point of the game?

Let's make Michigan Mania even more awesome.

Think about what **stuff** you have in your pocket, could make out of scrap paper, or have in front of you. How could they join your game?

Now think about adding some **game play elements** that make your game more engaging and compelling.

We'll be circulating with tickets you can swap for additional supplies!

- Interesting decisions
- Conflict
- Risk
- Resource management
- Dexterity
- Speed
- Storytelling



Board Game Gallery Walk

- A word about protocols
- 1st round: Groups who worked in back half of room (windows) host their games; those who worked up front (kitchen) visit
- 2nd: Swap roles

Possible Gallery Walk Prompts to Help Kids (and Us) Keep the Conversation Positive

- What inspired you to make this game?
- What was your biggest challenge? How did you overcome it?
- Would you enjoy continuing to work on developing this game?
- What would you change about this game if you had more time?

Board Game Reflection

Share your thoughts:

Possible questions:

1. What could kids you work with learn from an activity like this?
2. What kinds of scaffolding would they need?
3. How would you document success?






#10: 7 S's of Planning

Students
Stamina
Support
Sherpas
Space
Storage
Stuff

(Range & Schmidt 2014)

TechBox Toolkit, Available April 2015 from seedstudio.org

How much can you take on and sustain?



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(Range & Schmidt 2014)

It's a great day to learn something new

Make an exciting discovery @ your library!

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



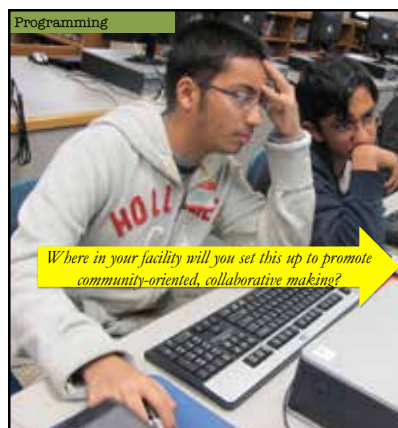
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Snap Circuits

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



#10: 7 S's of Planning

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(Range & Schmidt 2014)

Programming

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




#10: 7 S's of Planning

Students/
patrons
Stamina
Support
Sherpas
Space
Storage
Stuff

(Range & Schmidt 2014)

LittleBits Arduino Kit

Where are you going to put it all away?



#10: 7 S's of Planning

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(Range & Schmidt 2014)

Design a board game

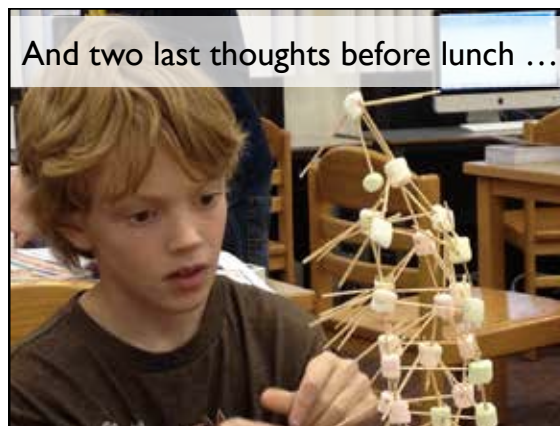


#10: 7 S's of Planning

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(Range & Schmidt 2014)

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




As you begin to formulate your plan, think about:

- Process over product
- Agency over adult-directed work
- Choice over following directions
- Experimental mindset over "failure if it doesn't work the first time"



Documentation

- Plimpton = "participatory journalism"
 - You = "participatory researcher"
- Photos
- Videos
 - Peer interviews
 - Pitches
 - "What are you working on?"
 - Reality TV confessionals
- Journals, progress diaries, surveys (caveat emptor!)

LUNCH BREAK!

SEE YOU AT 2:30!

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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