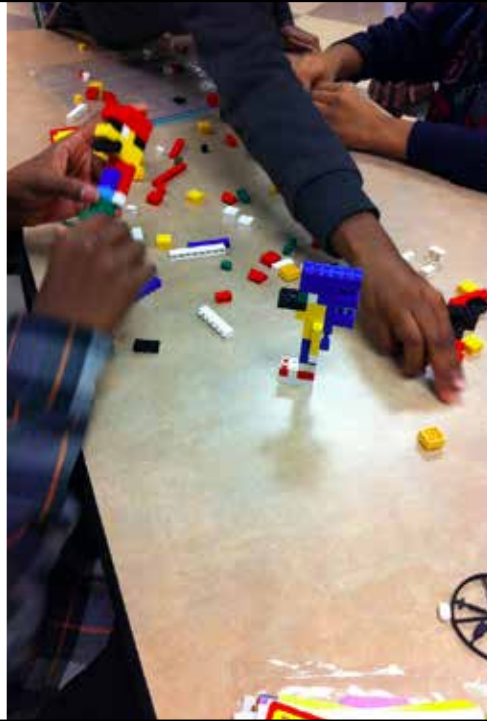


MAKERSPACES, THE MAKER MOVEMENT, AND BEYOND

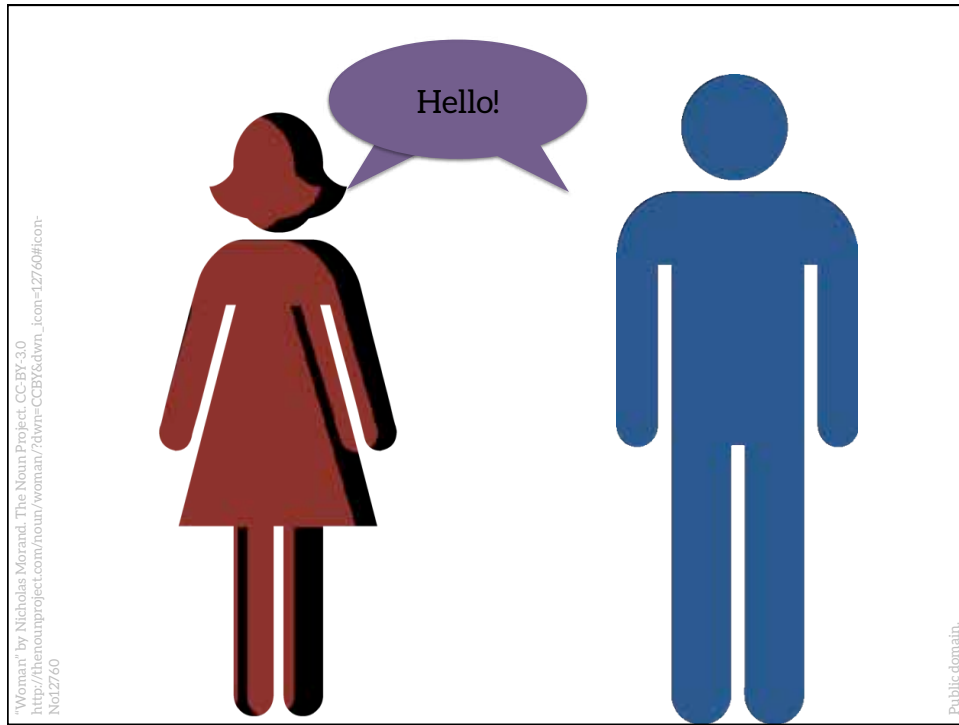
Kristin Fontichiaro and Charles Severance
University of Michigan
School of Information
[@activelearning](#) [@drchuck](#)



TODAY'S SLIDES

bit.ly/fontblog or dr-chuck.com





CHERRY LAKE Page Count: 22 pages Word Count: 71,917* Illustrated: 0-8 Available in paperback
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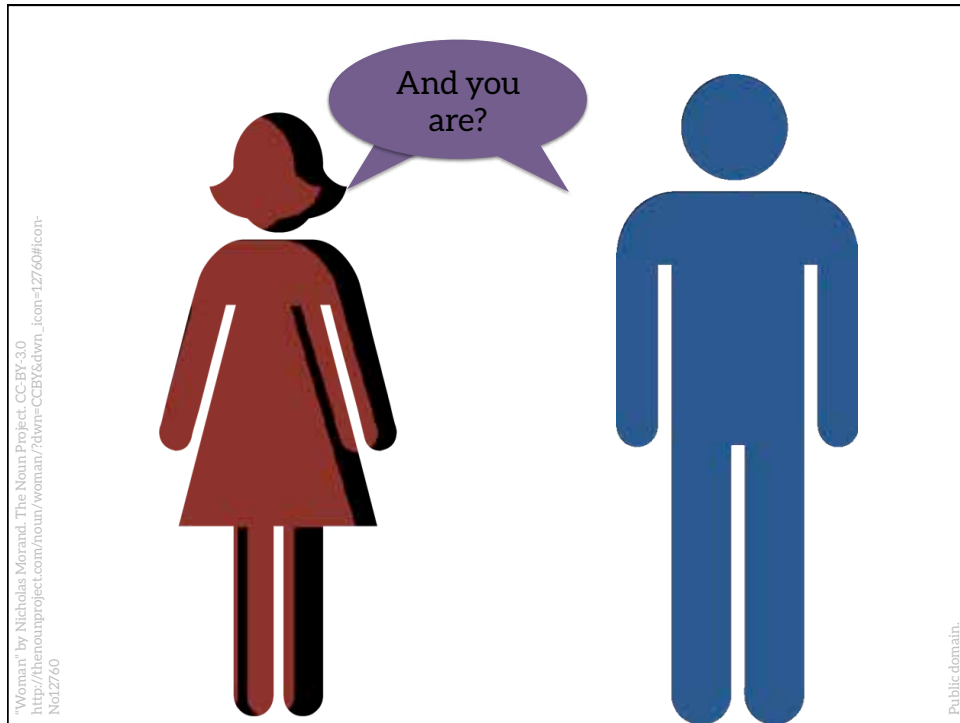
Maker Faire

Makerspaces
 Raspberry Pi

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<http://bit.ly/clp-makers>
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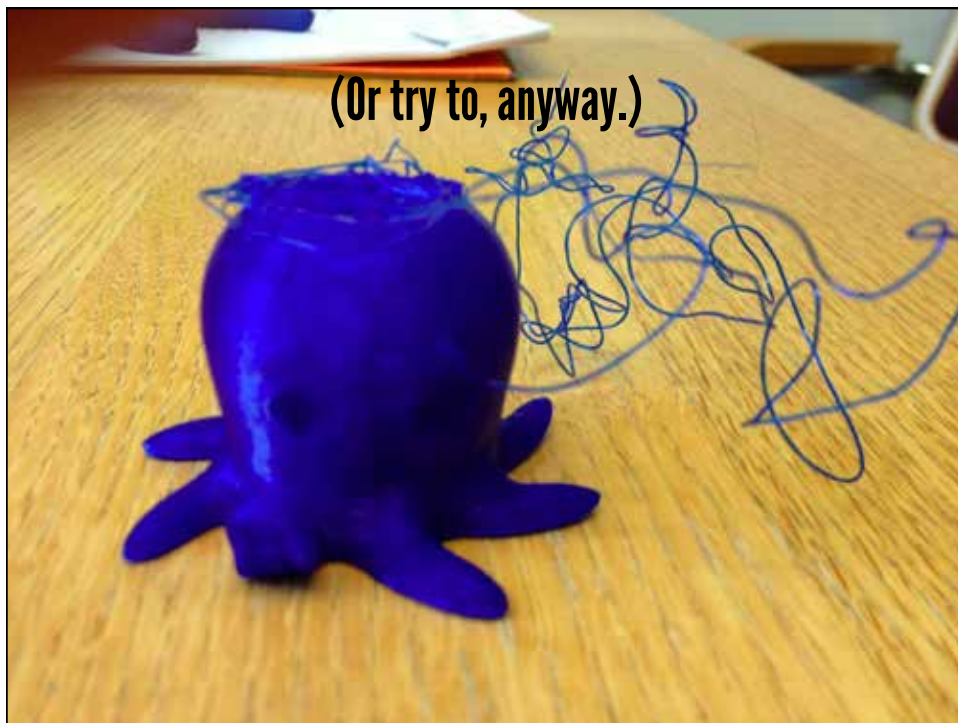
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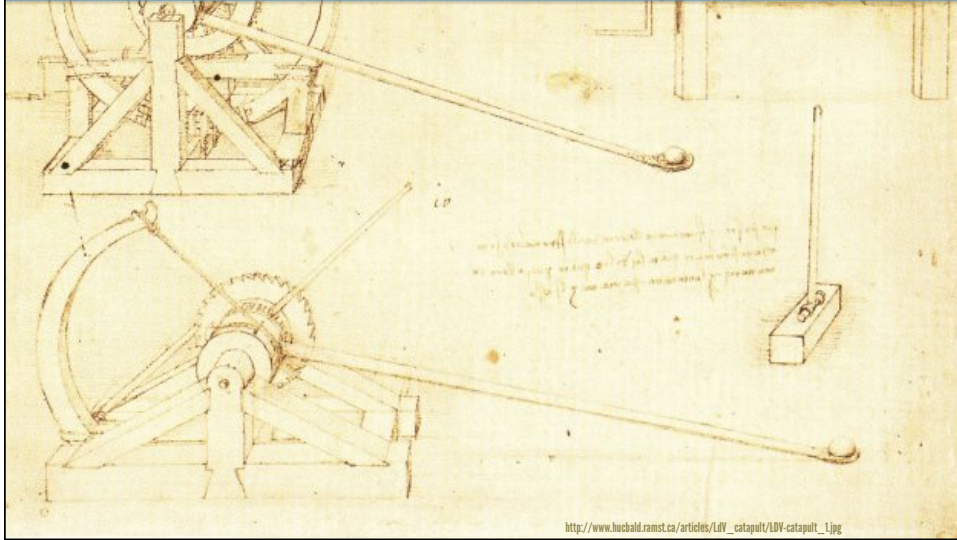


*Art Mechanic Vitruvian Man by Art Mechanic on Wikimedia. CC BY SA.
http://commons.wikimedia.org/wiki/File:ArtMechanic_Vitruvian_Man.jpg

Makers
Transform
Stuff.



How can we support the Leonardos in our community?



http://www.huchald.ramst.ca/articles/LDV_catapult/LDV_catapult_1.jpg

Makerspaces are one answer.



This is a makerspace.



This is, too.





Ann Arbor Modern Quilt Guild at Maker Works, Ann Arbor
<http://www.maker-works.com/content/ann-arbor-modern-quilt-guild>

And so is this.



<http://www.maker-works.com/content/walk-through-check-out-class-mystery-unit>

And this.



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/>

EXPLORATION + FORMAL AND INFORMAL LEARNING + PEER LEARNING + EXPOSITION

Tools
+
Support
+
Community

People
+
Process
+
Place

Dale Grover, Maker Works, Ann Arbor, Michigan





Press photo from artfair.org

**No Two Makerspaces Are
The Same.**

TEN RULES OF THUMB FOR MAKERSPACE SUCCESS



"Lady Story" by Sanna R on Flickr. CC-BY. http://flickr.com/photos/sanna_nixi/799023133/

#1: KNOW YOUR PURPOSE.

Entertain? Inform? Educate?

Enhance academics? Fill a void in academics?

Introduce concepts and tools or provide them for savvy users?

Create an extended community? Serve as an-ramp?

Welcome new makers? Provide new services for existing makers?

#2: EMBRACE OPEN SOURCE THINKING.



'Arduino Uno R3' by SparkFun Electronics on Flickr. CC-BY.
<http://flickr.com/photos/sparkfun/8406865680/>

#3: PARTNER – DON'T COMPETE – WITH OTHERS.





#5: MATCH MENTORS WITH LEARNERS.



East Middle School

1042 S. Mill Street • Plymouth, Michigan 48170
Phone: 734 / 416-4950 • Fax: 734 / 416-4949
A Michigan Department of Education Accredited School

PLYMOUTH-CANTON
Community • Schools

Scott Busak
Principal
Christopher Morax
Assistant Principal

4/24/13

To whom it may concern,

I am writing about Michigan Makers, an after-school program at East Middle School. In Michigan Makers, you learn differently than you would in a regular classroom. You learn about how to make an endless list of things. Makers learn how to work with programs like Scratch. They also learn about things that other makers around the world have created, like Arduino, and the Raspberry Pi. Makers learn about other concepts like board game design, conductive clay, 3D printing, making comics, and sewing too. With all these things, 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 came every week to our school. They spent tons of their time to make it work, and they taught us so much. They were very patient, and endured all of our questions. They made the learning fun, and actually learned with us too. The students encouraged us to step out of what we were used to doing. We could show our projects and creations to them, and they would give us helpful feedback. They would give us their honest viewpoints: what was great, and what we could fix. They didn't teach us by handing us textbooks and assignments. They taught us by guiding us, then letting us figure things out on our own and solve problems in our own way.

The main thing I got out of Michigan Makers is a love of making. I met fascinating people. I got an understanding of how to use different programs and new skills. I also got many more ideas for cool projects I could work on in the future.

A school/library/community center/company should hire the graduate students because they are very dedicated. They have a lot of patience and know how to work well with people. They are enthusiastic about every idea. They have tons of amazing ideas, and they can make anything possible.

Sincerely,

Himaja

Himaja

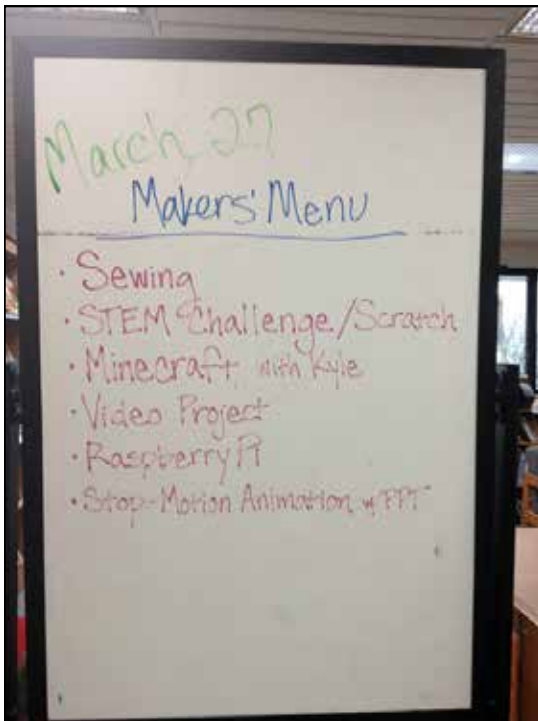
In Michigan Makers ... you are free to use your creativity in coming up with your own creations.

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

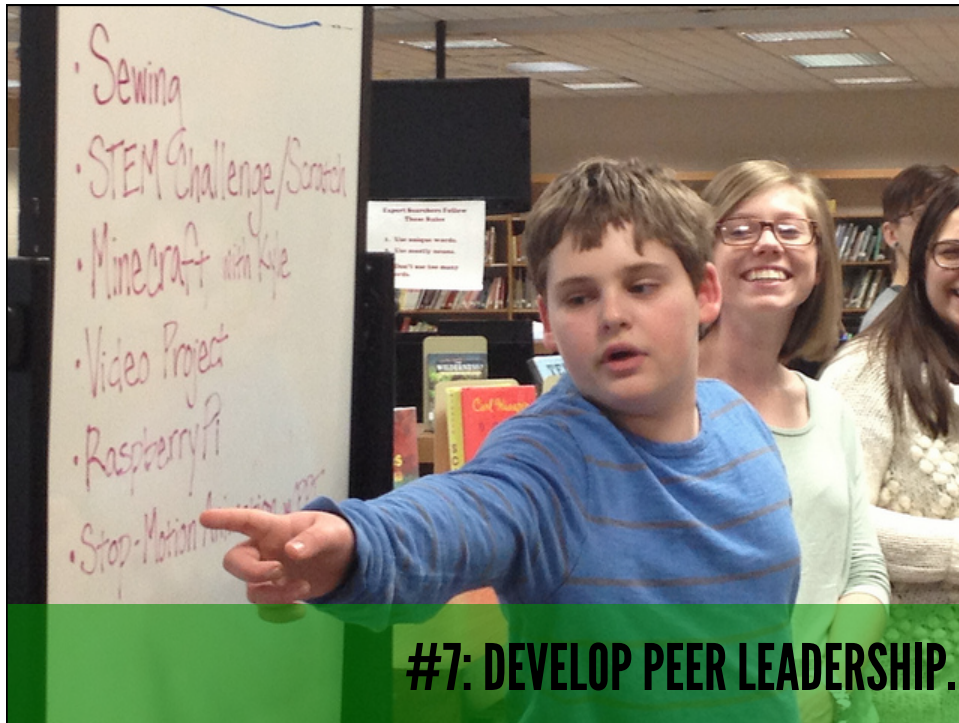
You meet other people who have completely different brains and ideas and thoughts, and who have the same interest in making that you do ...

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.”



**#6:
THINK WINDOWS
AND MIRRORS.**



#9: CELEBRATE PROGRESS.




#9: CELEBRATE MORE PROGRESS.





#10: CREDENTIAL LEARNING BEYOND SCHOOL.

badg.us

Awarded Badge: I Conquered the Squishy Circuits Pig Challenge!

Image: 

Awarded to:  Andrew Dawson


Awarded by:  Michigan Makers

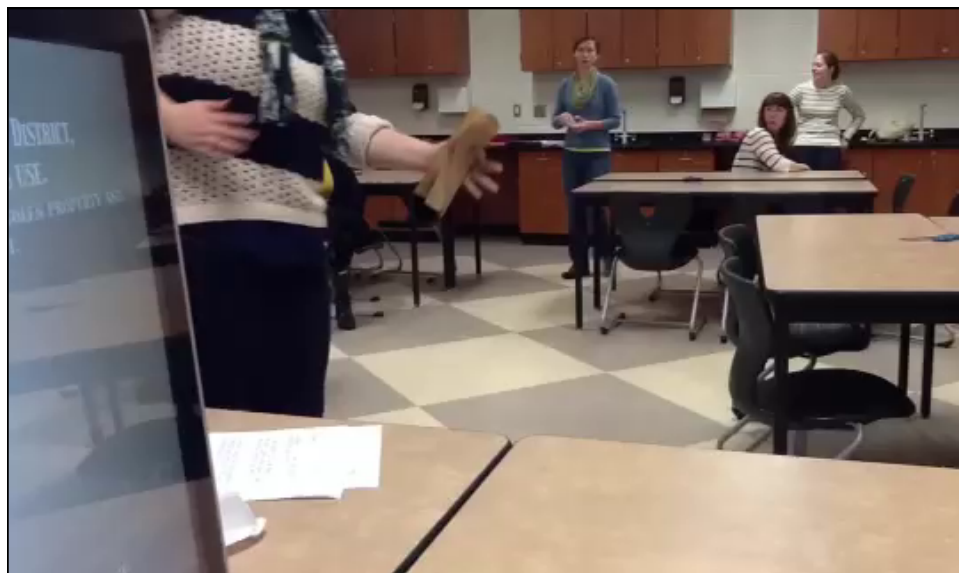
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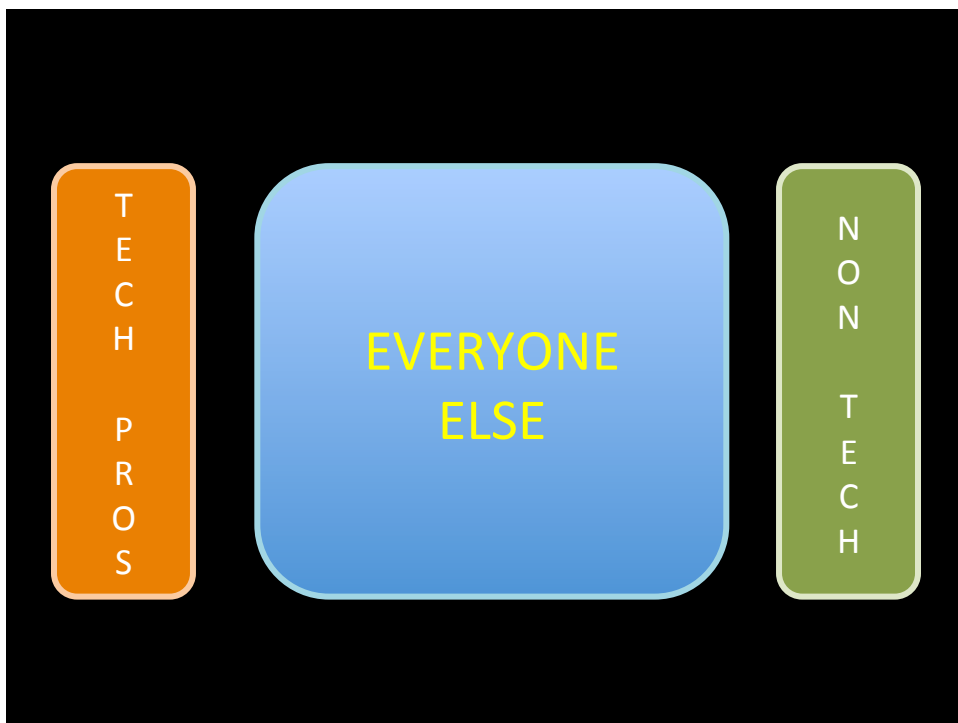
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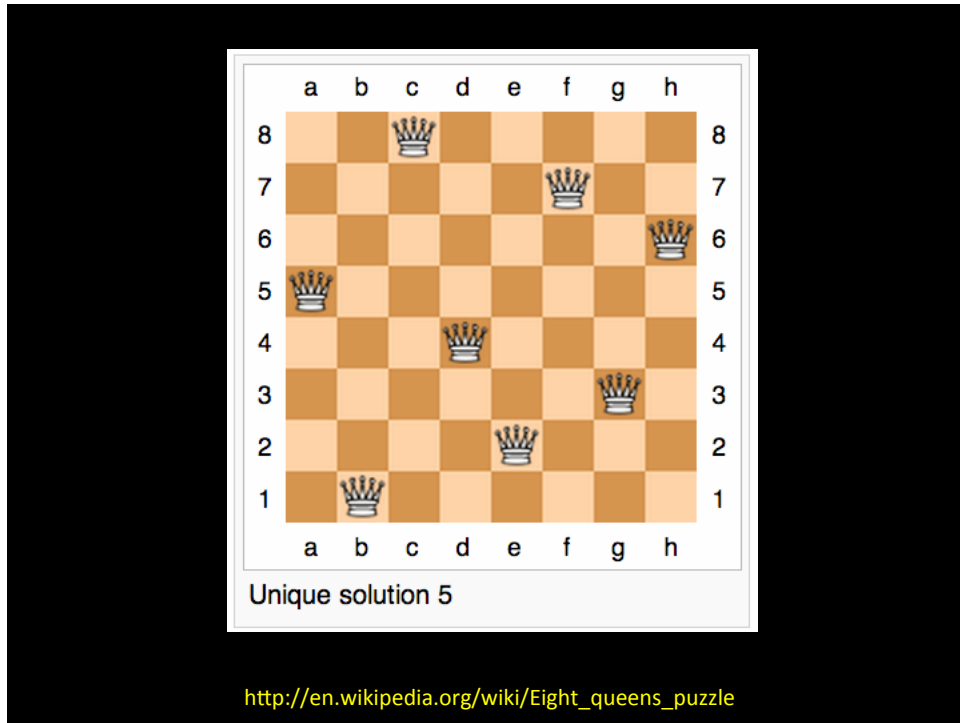
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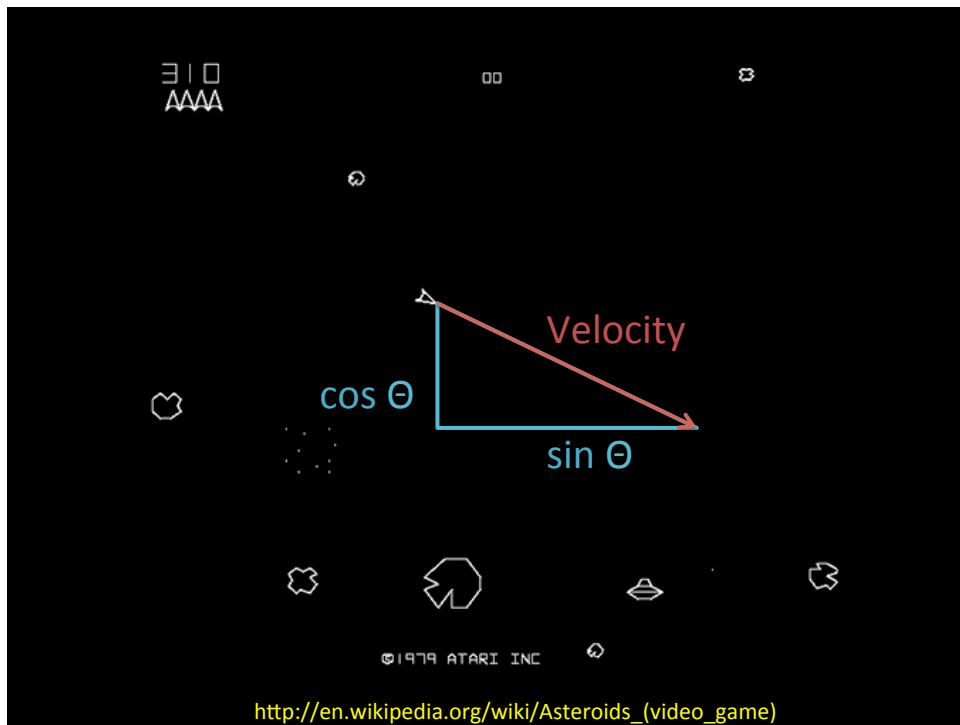
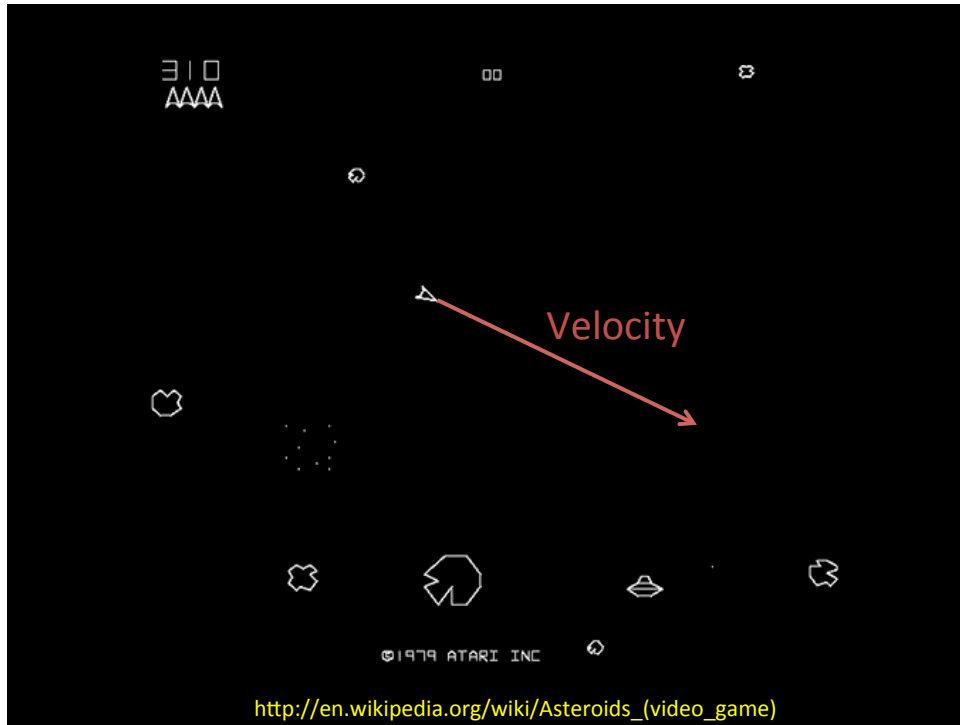
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WE ARE STILL LEARNING ...



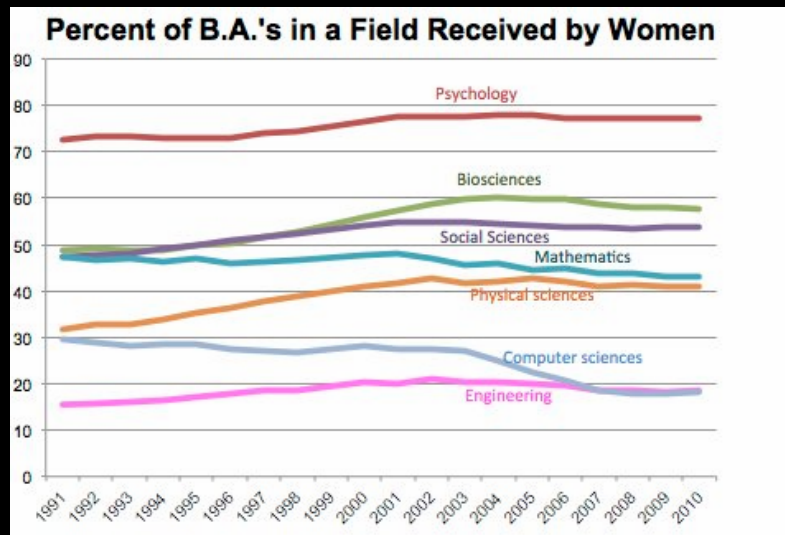


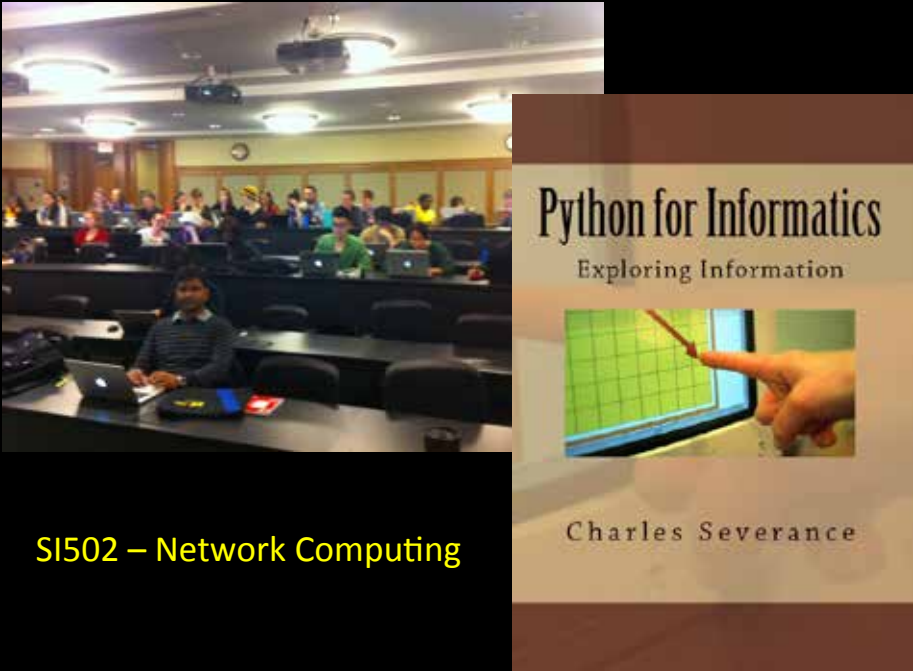


The liberal arts (Latin: artes liberales) are those subjects or skills that in classical antiquity were considered essential for a free person (a citizen) to know in order to take an active part in civic life



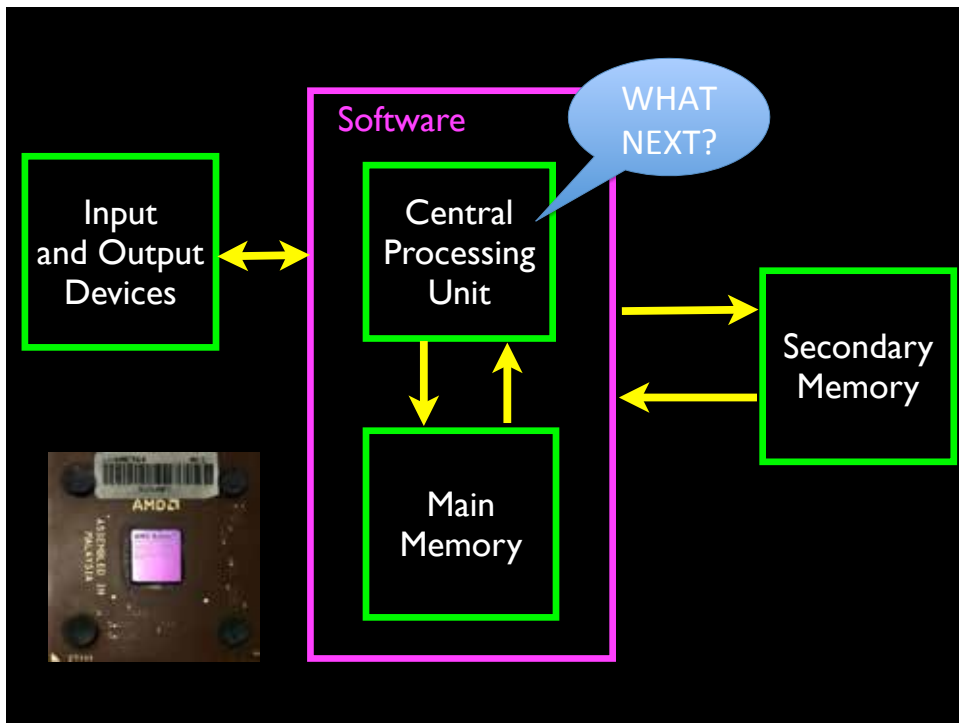
http://en.wikipedia.org/wiki/Liberal_arts_education

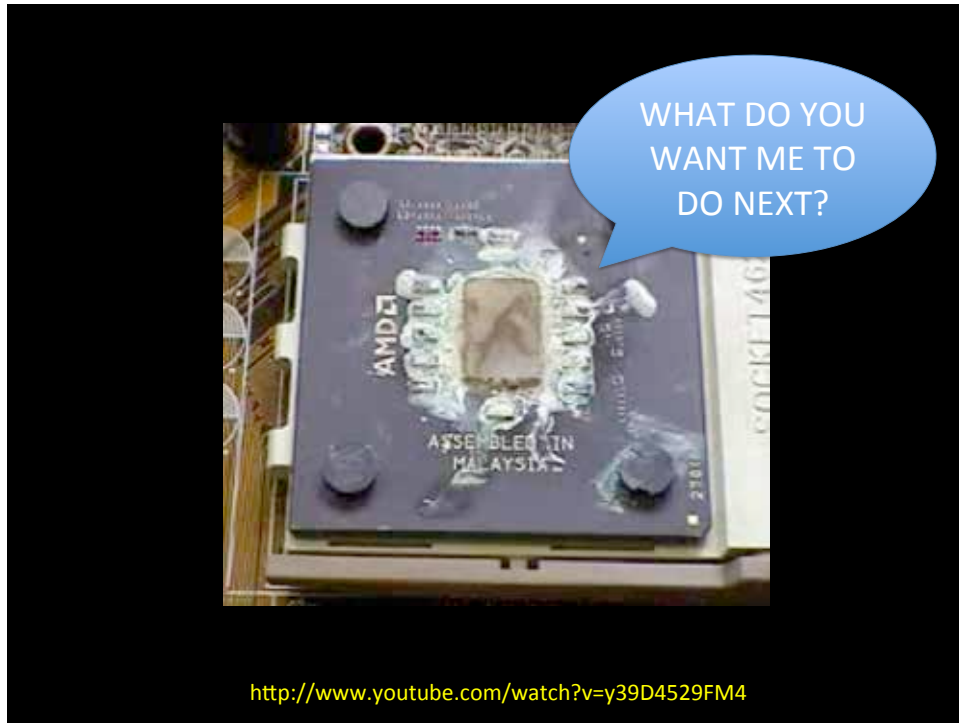




SI502 – Network Computing

Python for Informatics
Exploring Information
Charles Severance





while music is playing:

- Left hand out and up
- Right hand out and up
- Flip Left hand
- Flip Right hand
- Left hand to right shoulder
- Right hand to left shoulder
- Left hand to back of head
- Right hand to back of head
- Left hand to right hip
- Right hand to left hip
- Left hand on left bottom
- Right hand on right bottom
- Wiggle
- Wiggle
- Jump

Programs for Humans



<http://www.youtube.com/watch?v=vlzvuFkn88U>
<http://www.youtube.com/watch?v=sN62PAKoBfE>

while music is playing:
Left hand out and up
Right hand out and up
Flip Left hand
Flip Right hand
Left hand to right shoulder
Right hand to left shoulder
Left hand to back of head
Right **ham** to back of head
Left hand to right **hit**
Right hand to left **hit**
Left hand on left bottom
Right hand on right bottom
Wiggle
Wiggle
Jump

Errors in Programs for Humans



<http://www.youtube.com/watch?v=vlzvuFkn88U>
<http://www.youtube.com/watch?v=sN62PAKoBfE>



Bachelor of Science In Information

Welcome to the newest School of Information degree!

The first class of juniors and seniors will enter the Bachelor of Science in Information program in Fall 2014, and we couldn't be more excited.

Use the menu at left to find out more details about the program and its components.

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Edit Course Description Edit Session Descriptions Edit Session Materials


M UNIVERSITY OF MICHIGAN

Internet History, Technology, and Security


Charles Severance

What is the Internet? How was it created? How does it work?

Workload: 3-5 hours/week



Sessions:

Oct 7th 2013 (11 weeks long)	Sign Up	
Jun 1st 2013 (11 weeks long)	Go to class	Enroll in Signature Track 
Mar 1st 2013 (11 weeks long)	View class archive	
Jul 23rd 2012 (13 weeks long)	View class archive	
Future sessions	Add to Watchlist	

1,457 1.7K 7.3k

[Tweet](#) [+1](#) [Like](#)

Alan Turing and Bletchley Park

- Top secret code breaking effort
- 10,000 people at the peak (team effort)
- BOMBE: Mechanical Computer
- Colossus: Electronic Computer




http://www.youtube.com/watch?v=5nK_ft0Lf1s



IP Address Format

- Four numbers with dots - each number 1-255 (32 bits)
- Kind of like phone numbers with an "area code"
- The prefix of the address is "which network"
- While the data is traversing the Internet - all that matters is the network number





New York NY, Los Angeles CA,
Ann Arbor MI, Wilmington, NC,
Chicago IL, Washington, DC,
Memphis, TN, Seattle WA, Seoul,
Barcelona, London, Amsterdam,
Melbourne, Perth

<http://youtu.be/GD9RSoVDKkw>

Community Teaching Assistants

- Volunteer students from prior sessions
- Culture forms very rapidly
- Questions answered quickly



Sue - CA



Mauro - Italy



Megan - UK



Mazen - Egypt



Susan - PA



Karen - NC



Learning Hubs

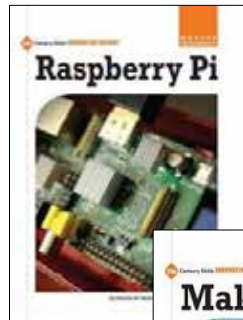
<http://blog.coursera.org/post/65596539008/introducing-coursera-learning-hubs-global>

The image features a world map on the left with numerous red location pins indicating the global presence of Learning Hubs. To the right, a collage of nine photographs shows diverse learning environments: a lecture hall, a library, a classroom with students, a meeting room, a large open-plan space, a computer lab, and various other educational settings.



Join us!
<http://makerbridge.si.umich.edu> - @makerbridge
created by Sharona Ginsberg

A photograph of four young boys sitting on a checkered floor in a school hallway. They are gathered around a project on the floor, which appears to be a map or a technical drawing. One boy is pointing at the project, while the others look on with interest. The hallway has a checkered tile floor and red doors in the background.



QUESTIONS?

KRISTIN FONTICHIARO

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@activelearning

<http://bit.ly/fontblog>

CHUCK SEVERANCE

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