The Maker Mindset

Josh Ajima
DesignMakeTeach.com

Bell Ringer

What do you make?

(bonus for photos)

Share

-with the person next to you and/or

https://padlet.com/designmaketeach/ovffcvjwzywz

Goal

Explore strategies for discovering and fostering the Maker Mindset in ourselves, students and fellow educators.

Maker
Maker Educator
Maker Coach

HANDOUTS & CONTACT INFO

DesignMakeTeach.com/TCEA3

Josh Ajima

@DesignMakeTeach

DesignMakeTeach.com

youtube.com/designmaketeach

FEATURED PRESENTER

Digital Fabrication in the Classroom
Mon, February 5th, 8:00 AM – 11:00 AM, 9C

Scaling Up the Makerspace
Mon, February 5th, 3:30 PM – 4:30 PM, Ballroom E

The Maker Mindset
Tue, February 6th, 9:45 AM – 10:45 AM, Ballroom F

Making with Head, Hands, and Heart
Tue, February 6th, 11:30 AM – 1:00 PM, 6B

The Makerspace Chromebook
Wed, February 7th, 8:00 AM – 11:00 AM, 10A

3D Printing Projects That Matter
Wed, February 7th, 3:30 PM – 5:00 PM, 9A

Josh Ajima - DesignMakeTeach.com

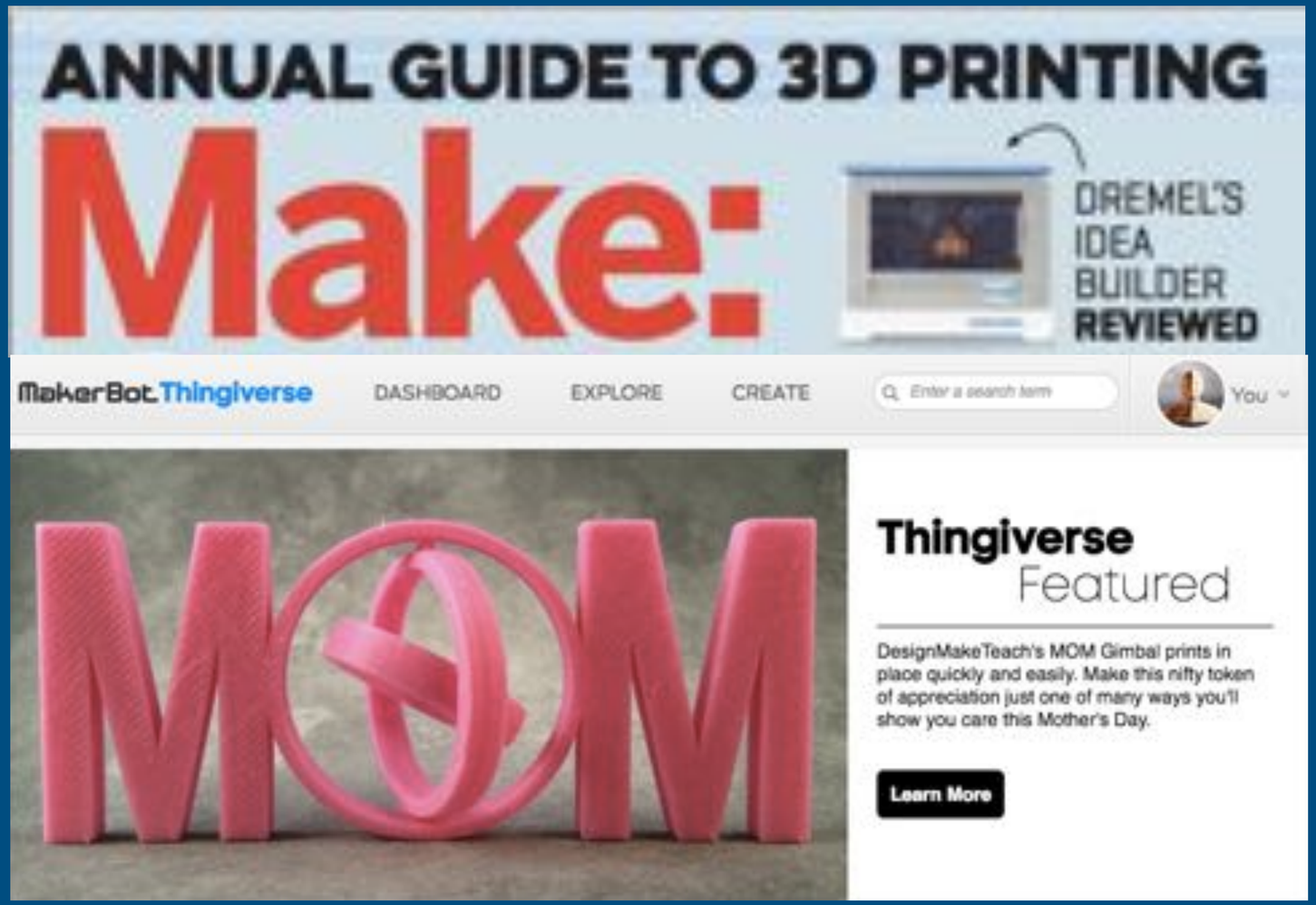
EDUCATOR

Instructional Facilitator for Technology
-Dominion High School & Loudoun Academy of Science, Sterling, Virginia (2003-present)

Director of Instructional Technology
-Clarke County Public Schools (1998-2003)

Teacher: Chemistry, 7th Life Science, 8th Physical Science, Cisco Networking
-Clarke County Public Schools (1996-1998)

MAKER



Make Magazine Review Team 2014 & 2015

Featured: Thingiverse, Pinshape, Adafruit

World Maker Faire NY: Best in Class Ribbon

Outsider Art Fair NY: Tower Design Competition - 2nd Place

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MAKER EDUCATOR

US Department of Education's CTE Makeover Challenge Winner

Stanford FabLearn Fellow

Formlabs 3D Design Awards -Top Educational Model

Construct3D 2017 - K12 Program Chair

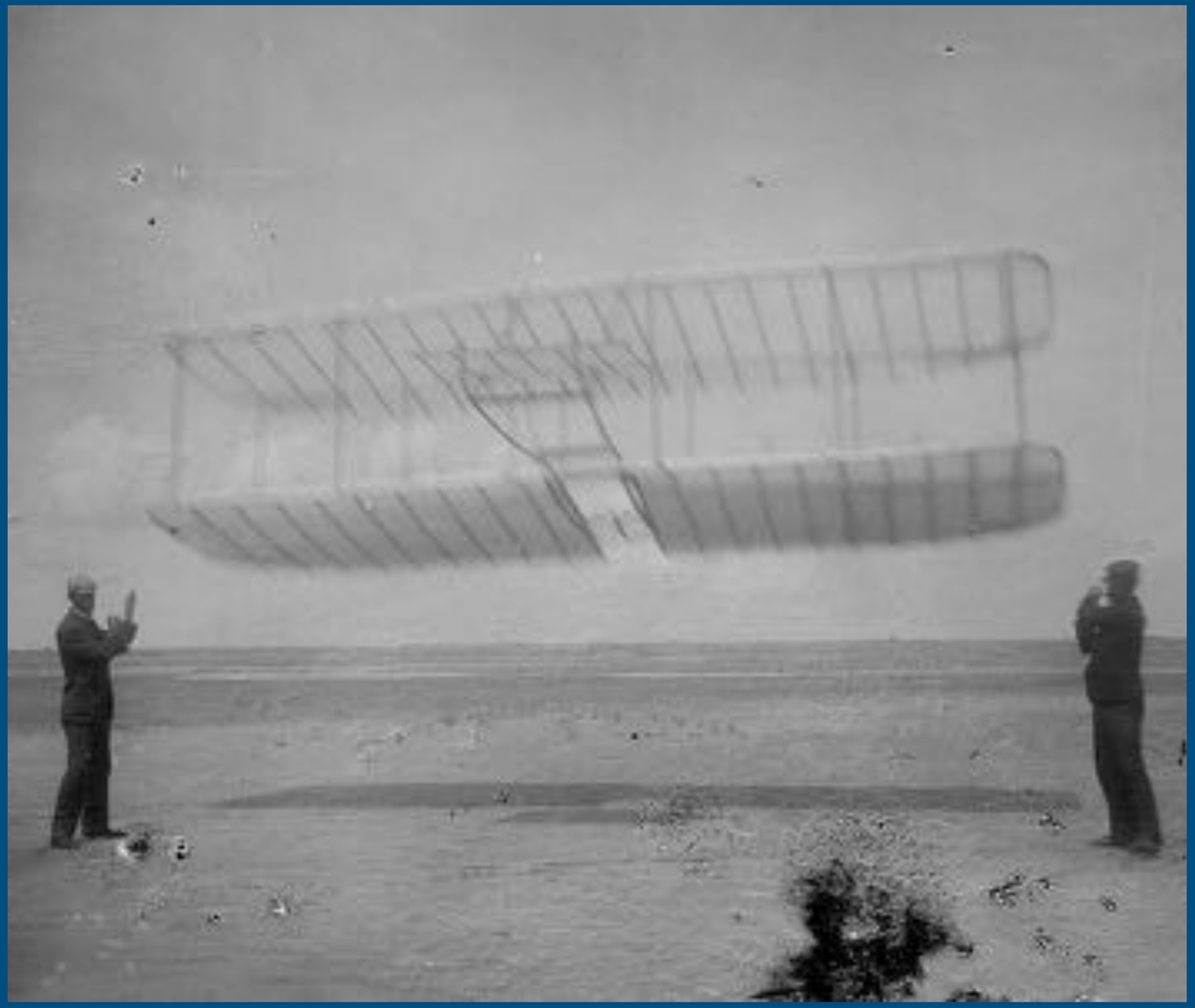
VSTE Innovative Educator of the Year

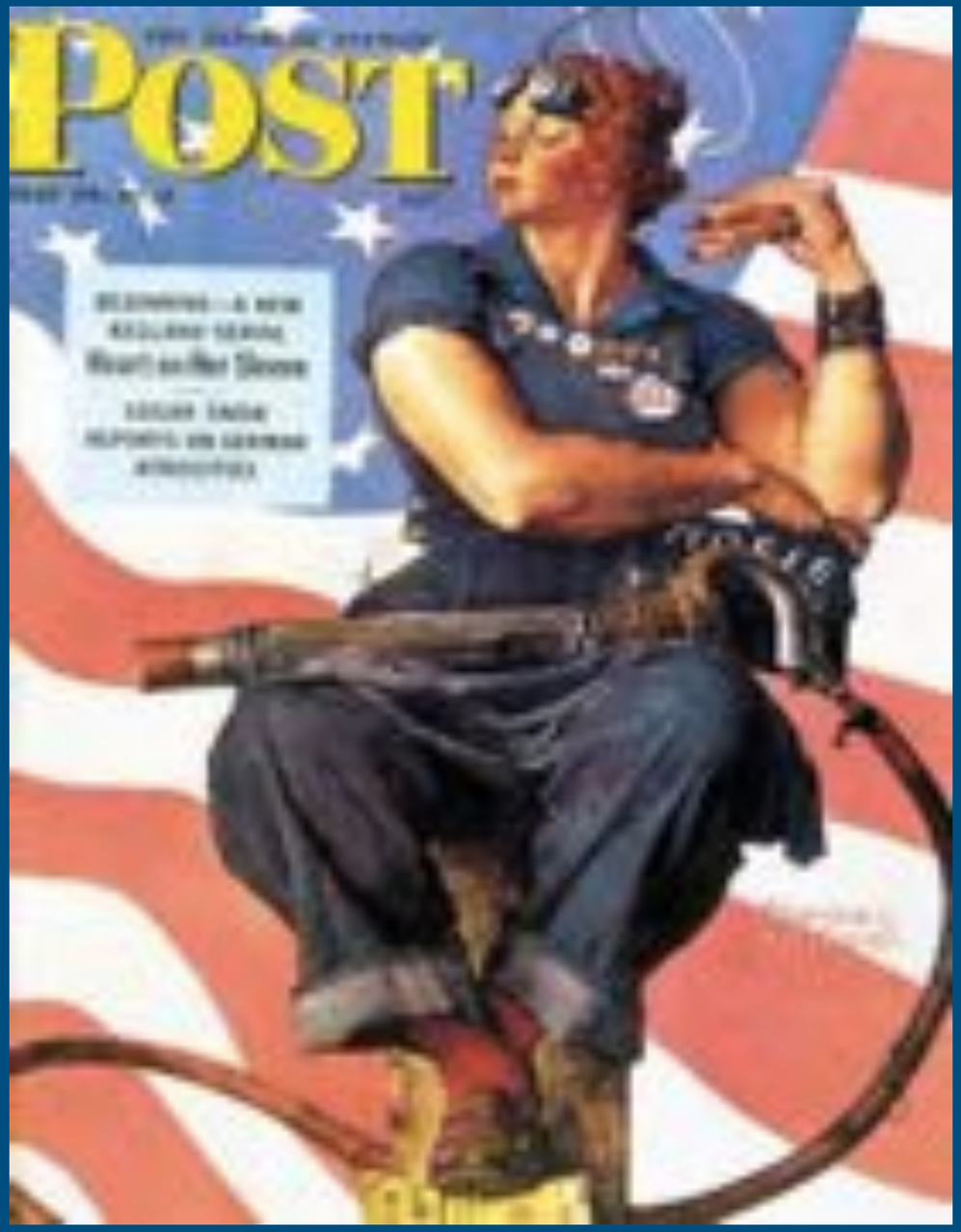
Josh Ajima - DesignMakeTeach.com

Maker
Maker Educator
Maker Coach

Maker

BETSY ROSS




POST

Attribution: Matthew Yohe at en.wikipedia

Maker Culture

Maker Movement

“We are all Makers.”

-Dale Dougherty

Dale Dougherty
@dalepd

Follow

Replying to @KirinDave @RealSexyCyborg and 4 others

I am questioning who she really is. Naomi is a persona, not a real person. She is several or many people.

8:59 AM - 5 Nov 2017

16

DRONES * ROBOTS * VIRTUAL REALITY

Make:

Build This Micro FPV Quad Racer

CYBORG & THE SINO:BIT

BRINGING OPEN SOURCE HARDWARE TO CHINA

MAKERS OF SHENZHEN
CHINA'S SILICON VALLEY OF HARDWARE, POP. 12M

DIY DISASTER RELIEF

LOTS OF PROJECTS!

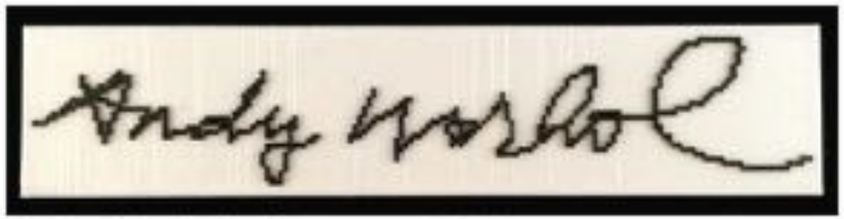
- DAZZLING RAINBOW LIGHTBOX
- DOGGIE TREAT DISPENSER
- BUDGET ROBOT RADAR
- TWIRL-A-SQUIRREL BIRD FEEDER
- BIGFACE BOX
- LED BROOM
- AND MORE

Naomi Wu
aka @realsexycyborg

makezine.com | makershare.com | makerfaire.com

Vol. 61 February/March 2018

What do you Make?



Andy Warhol's Signature, 2014
Josh Ajima (American, Born 1972)
3D Printed in PLA Plastic

3D Design Portfolio
Remixes of Gimbal
by
DesignMakeTeach

3D PRINTED STARKILLER
LIGHTSABER

3D Printer Club

BE HAPPY

Hidden Student Makers

Make a difference.

Maker Educator

-Time
-Space
-Materials
-Resources

Why are you a Maker Educator?

MY MAKER JOURNEY

Neil Gershenfeld: MIT Center for Bits and Atoms

-2005 NSBA Conference

-How to Make (almost) Anything

-Personal Fabrication

-FabLabs

Josh Ajima - DesignMakeTeach.com

UNIVERSAL DESIGN FOR LEARNING

-Multiple Means of Engagement
-Multiple Means of Representation
-Multiple Means of Action & Expression

Josh Ajima - DesignMakeTeach.com

A MAKER EDUCATION MODEL

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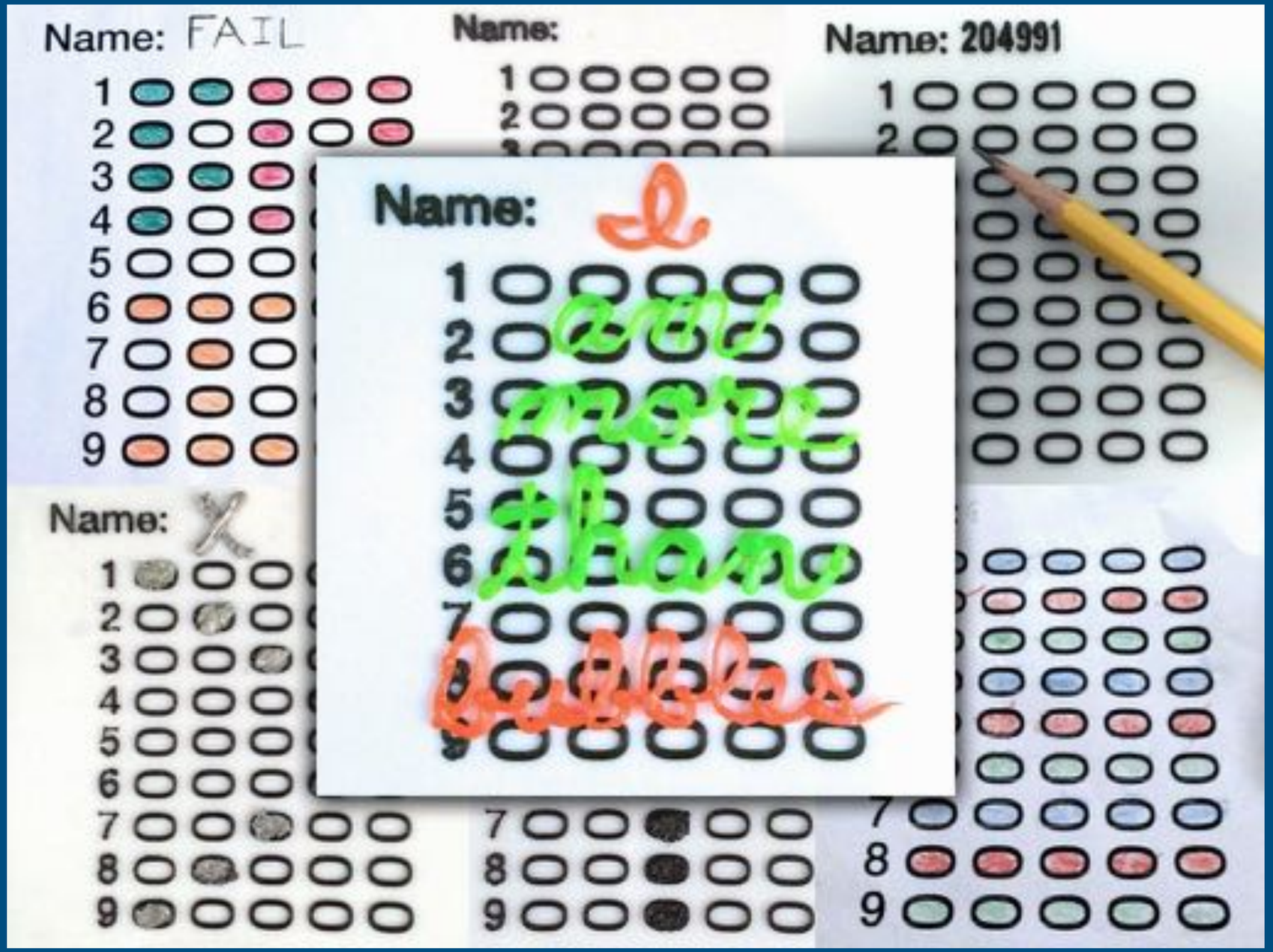
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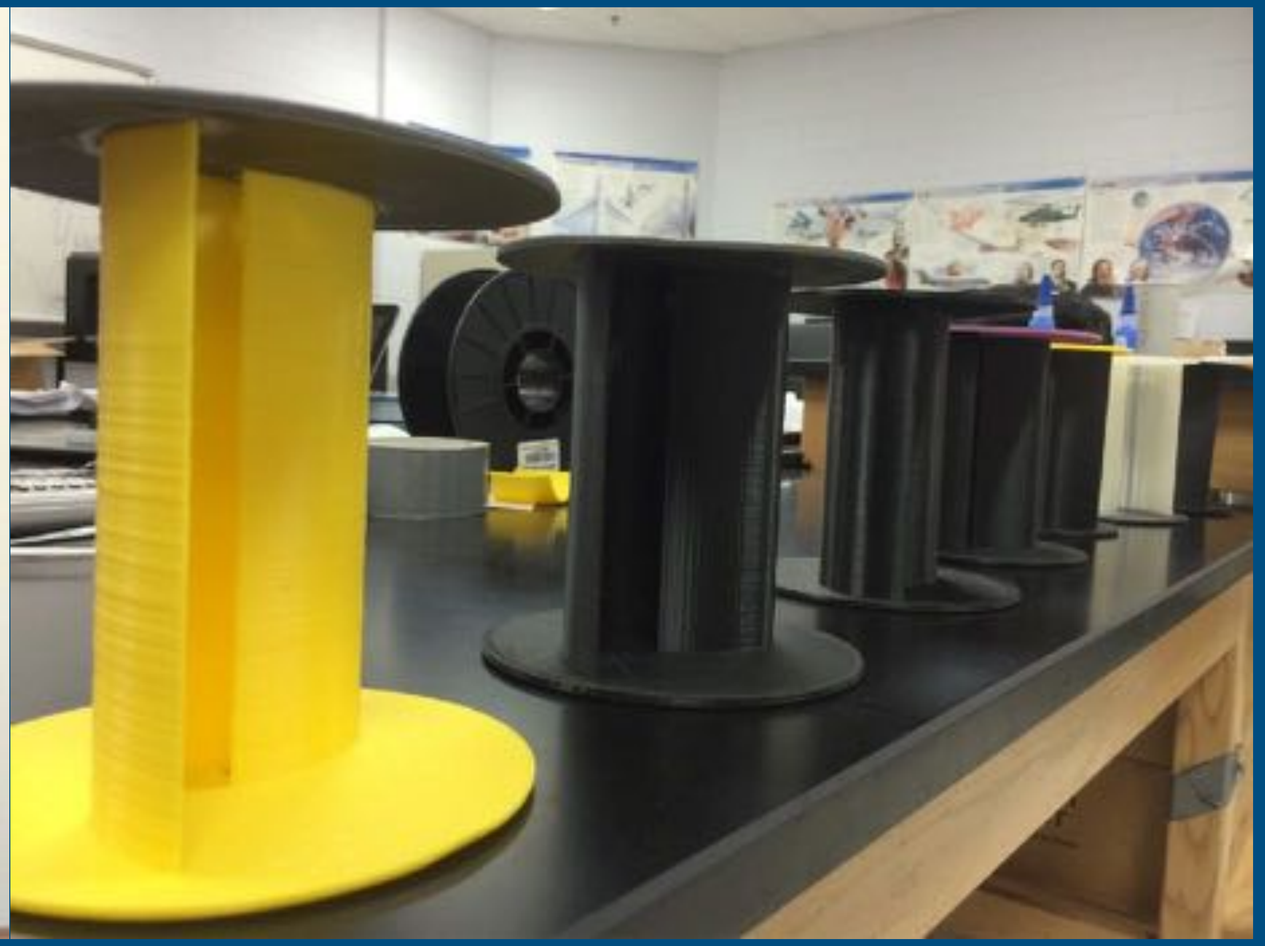
Science

Technology

Engineering

Math

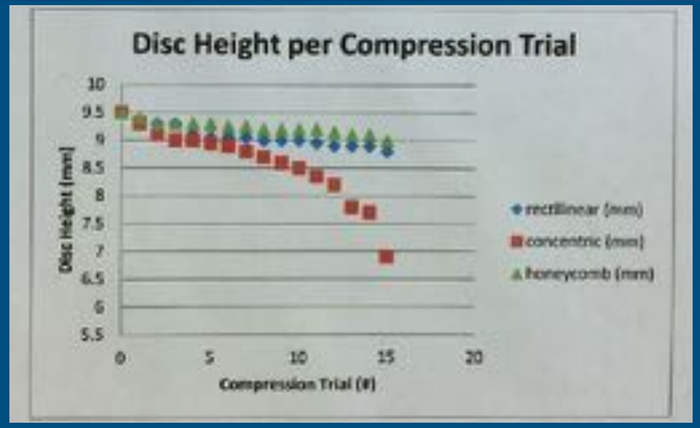


Design Iteration

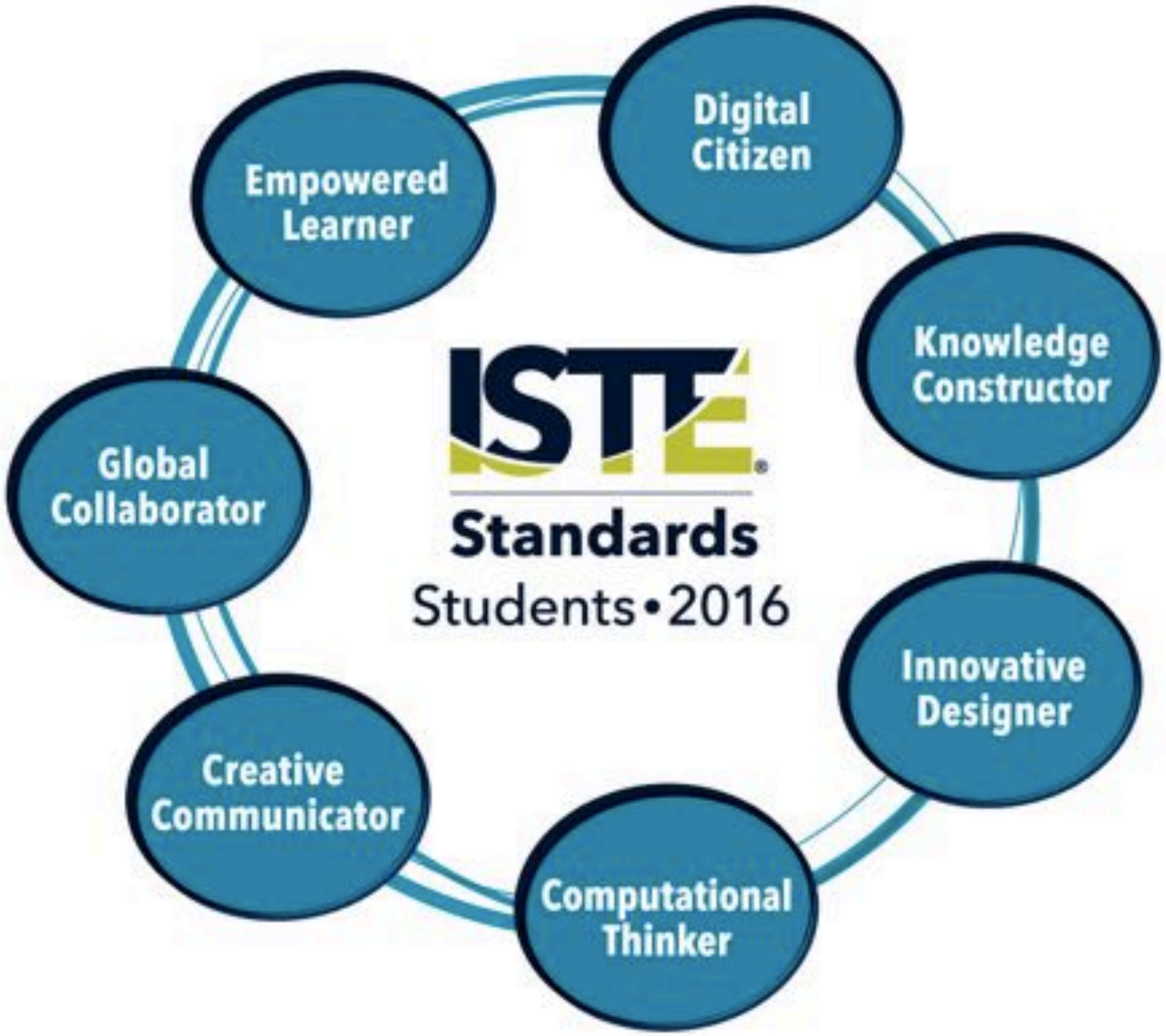
Solving Real Problems

Top to bottom, left to right: Honeycomb, Concentric, Line, Rectilinear, Hilbert Curve, Archimedean Chords, Octogram Spiral

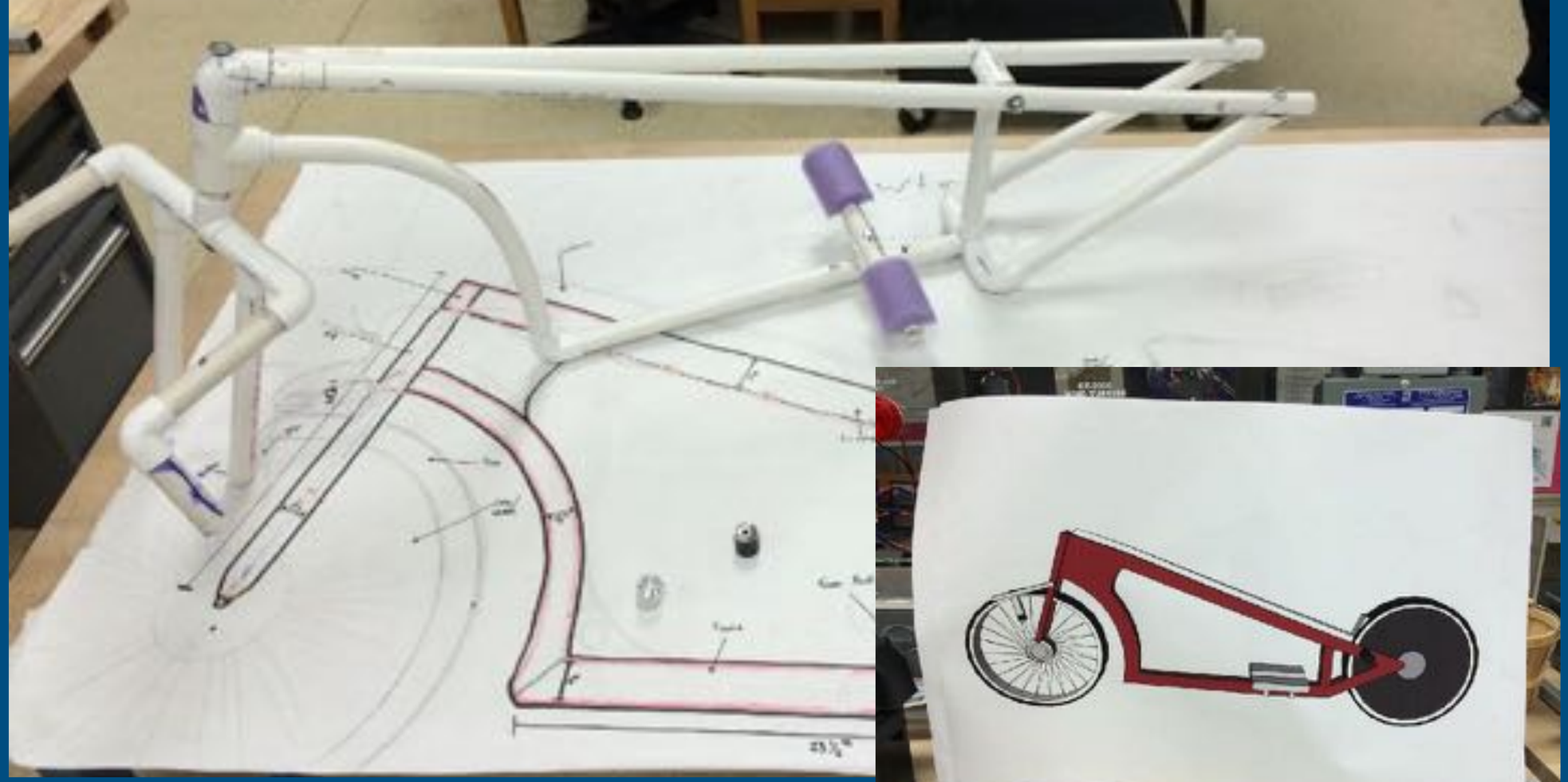
- 3D printers have been emerging in commercial markets for the last 30 years (Canossi, Fonda, & Zennaro, 2013)
- Most common type uses Fused Deposition Modeling (Flaherty, 2009)
- Uses thermoplastics like poly (lactic acid)
- Fatigue testing has been conducted in the past (Moore & Williams, 2012)



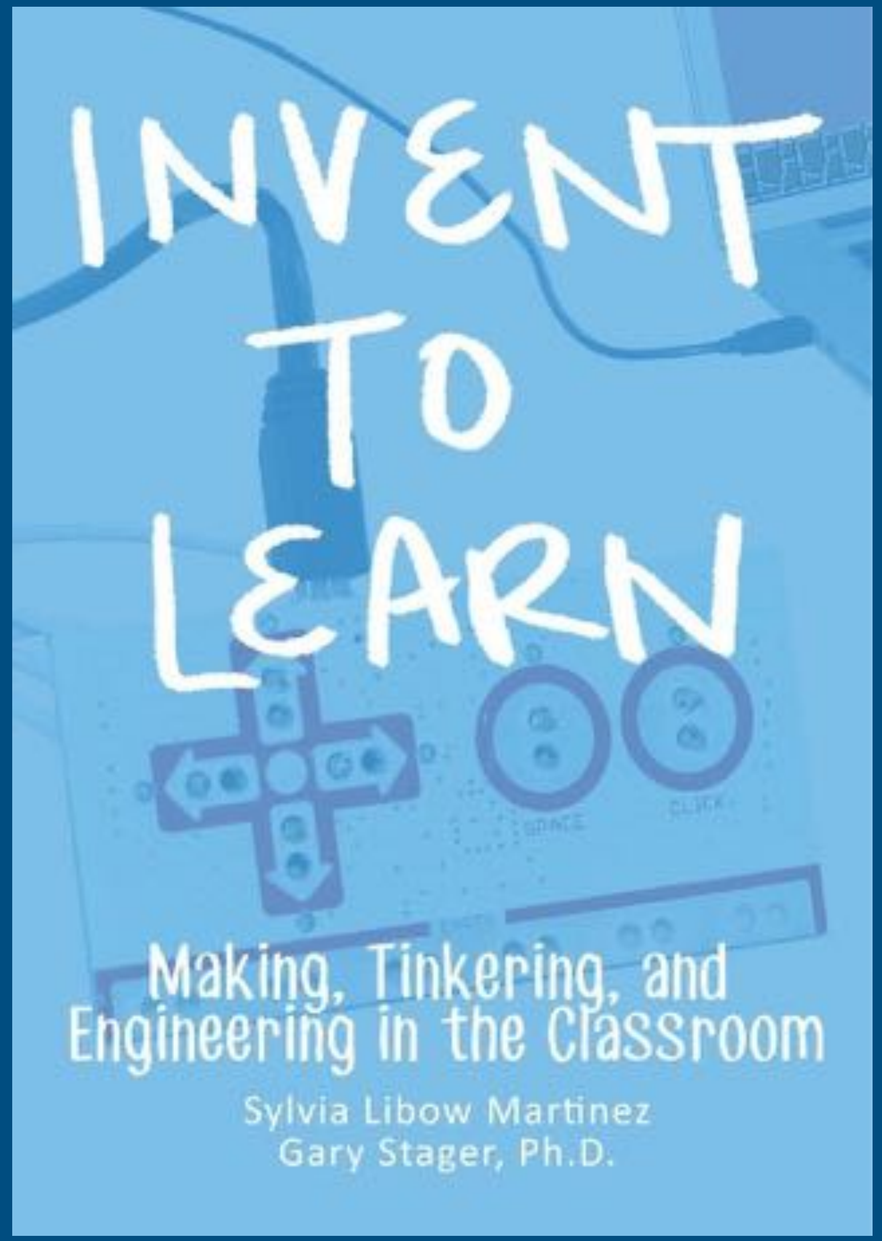
Sharing Results



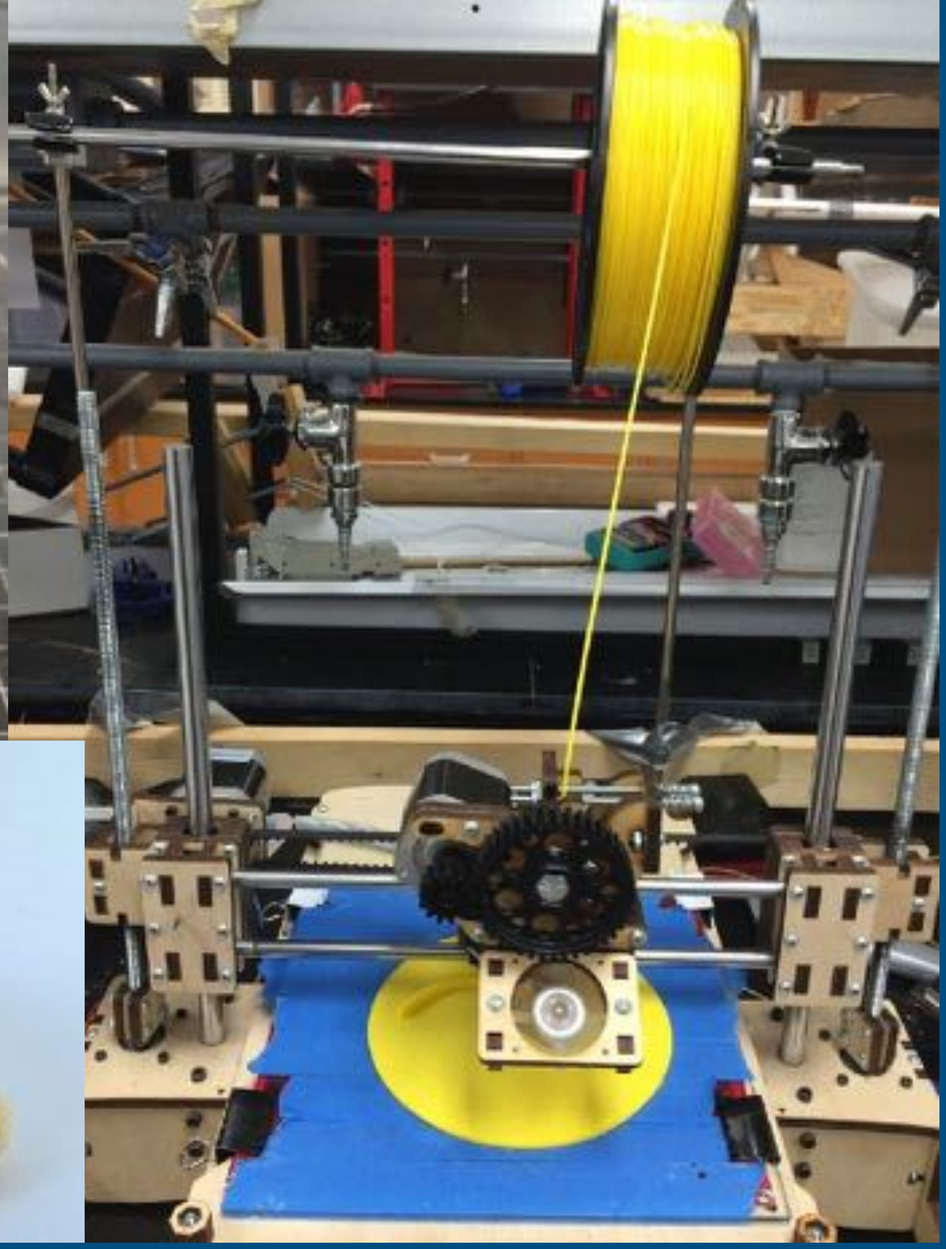
ISTE Standards



Project Based Learning



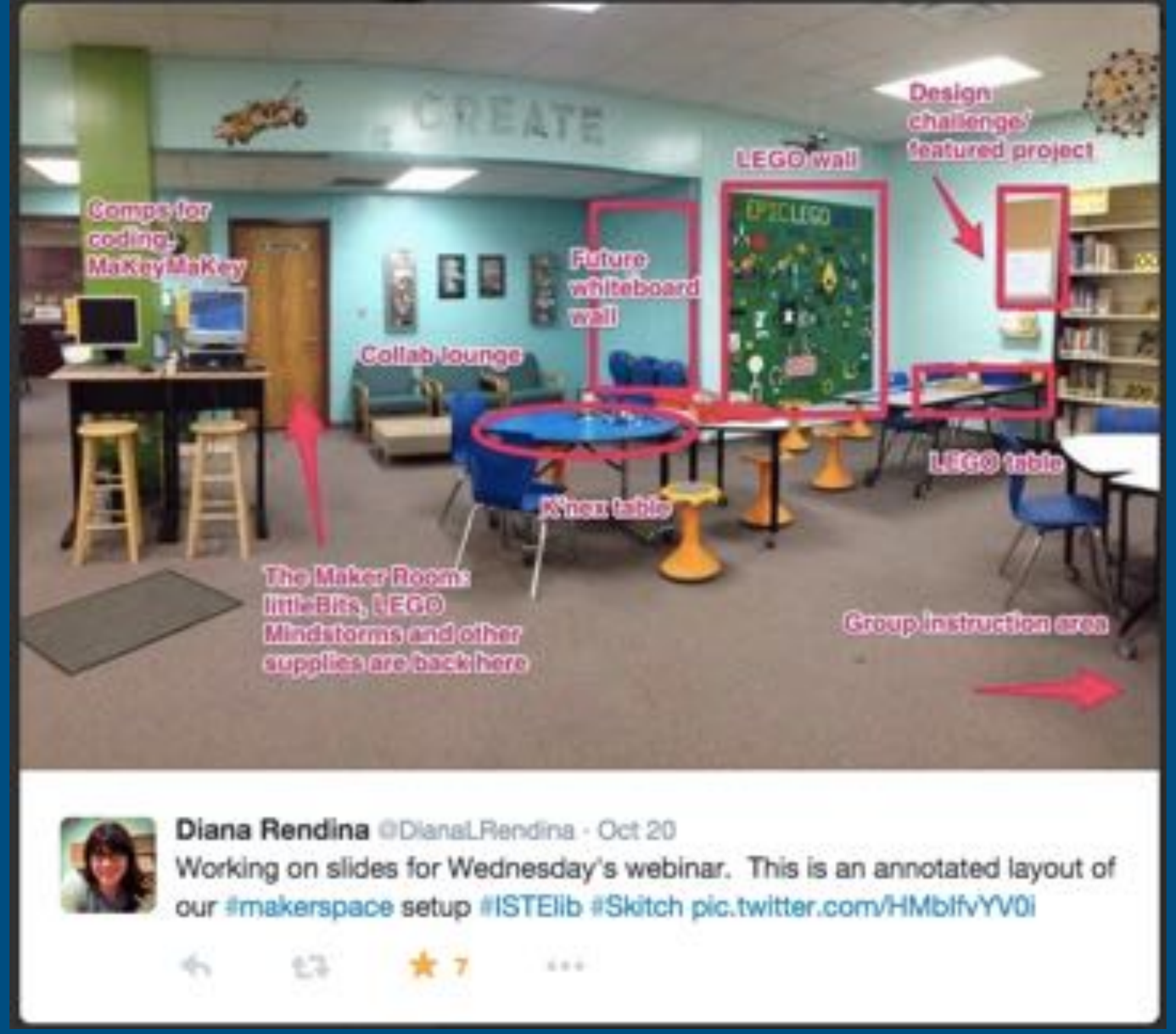
Learn by Making



Digital Fabrication

Programming

Physical Computing



Library Makerspace

Why are you a Maker Educator?

Great!

and then...?

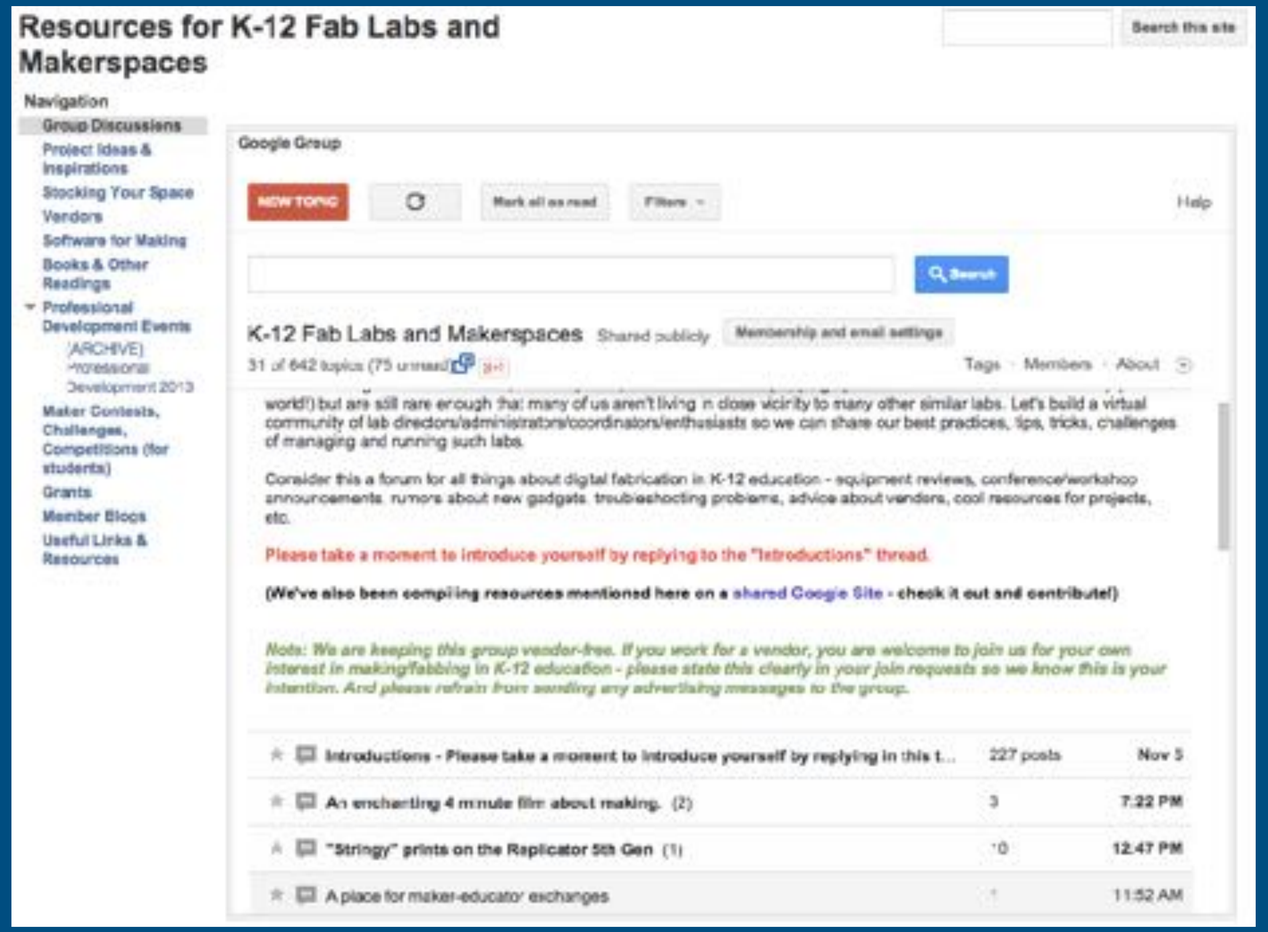
Find Your Tribe

FABLEARN .org

Where We Are

K-12 Fab Labs and Makerspaces Group

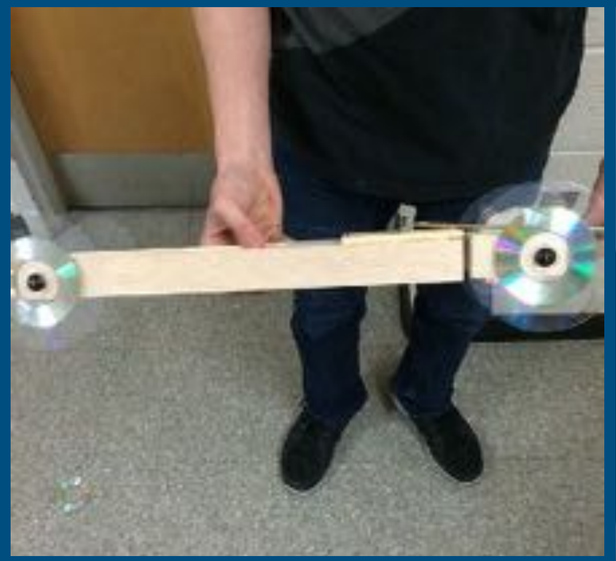
https://sites.google.com/site/k12makers/



Community

Maker Coach

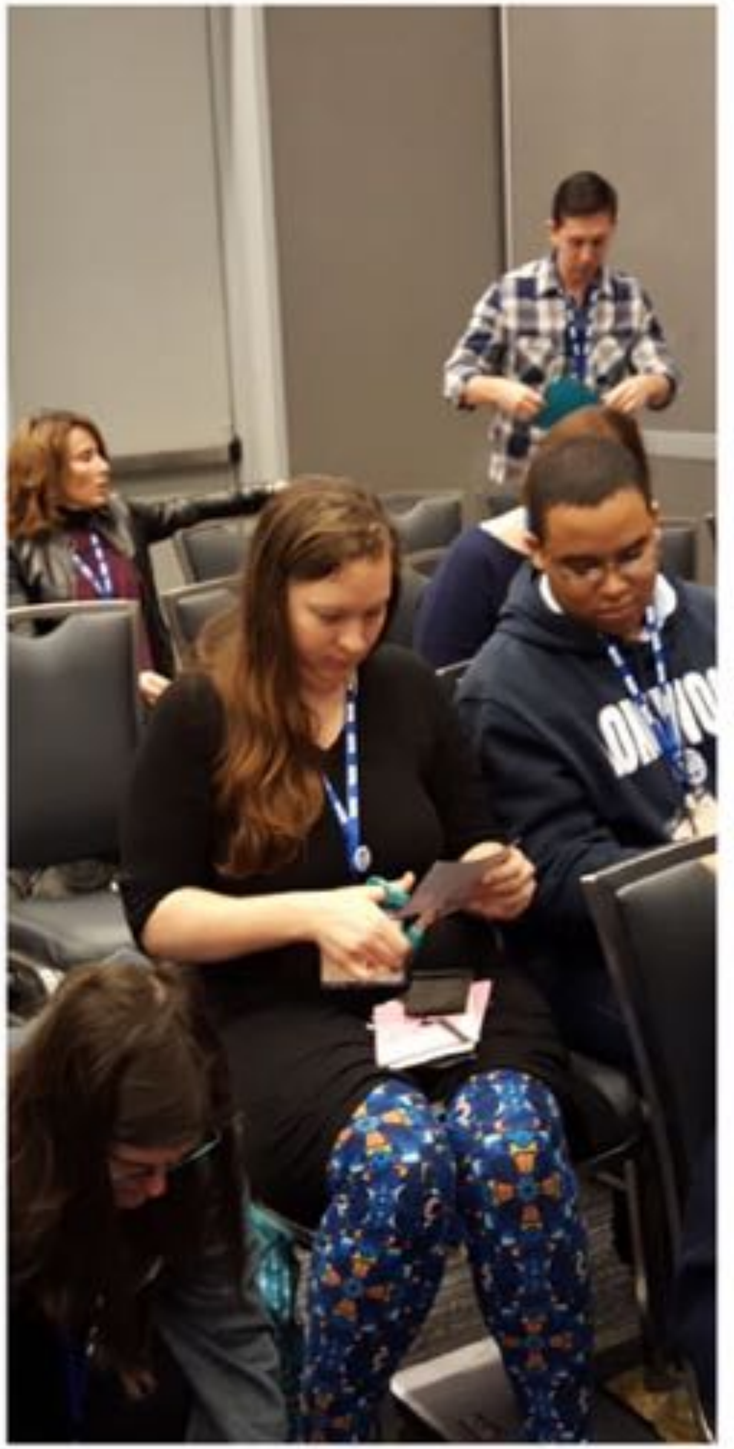
Photo by @aliharper20



Hidden Maker Educators

Professional Development

I'M A TEACHER WHAT'S
YOUR SUPERPOWER
YOUR SUPERPOWER



WORLDS COLLIDE

4 KEY ELEMENTS

SIGNIFICANT CONTENT & IMPORTANT COMPETENCIES

Through *One to the World* work, students develop as knowledgeable critical thinkers, communicators, collaborators, creators, and contributors. *One to the World* work ties directly to our curriculum.

AUTHENTIC CHALLENGING PROBLEMS in THE WORLD

One to the World student work is framed by an authentic, challenging problem. The work features real-world context, tasks and tools or impact.

PUBLIC PRODUCT for THE WORLD

Students make their work public by displaying and/or presenting it to people beyond the classroom. Students create and share products, performances, services, and exhibitions of work relating to authentic problems and tasks in the world.

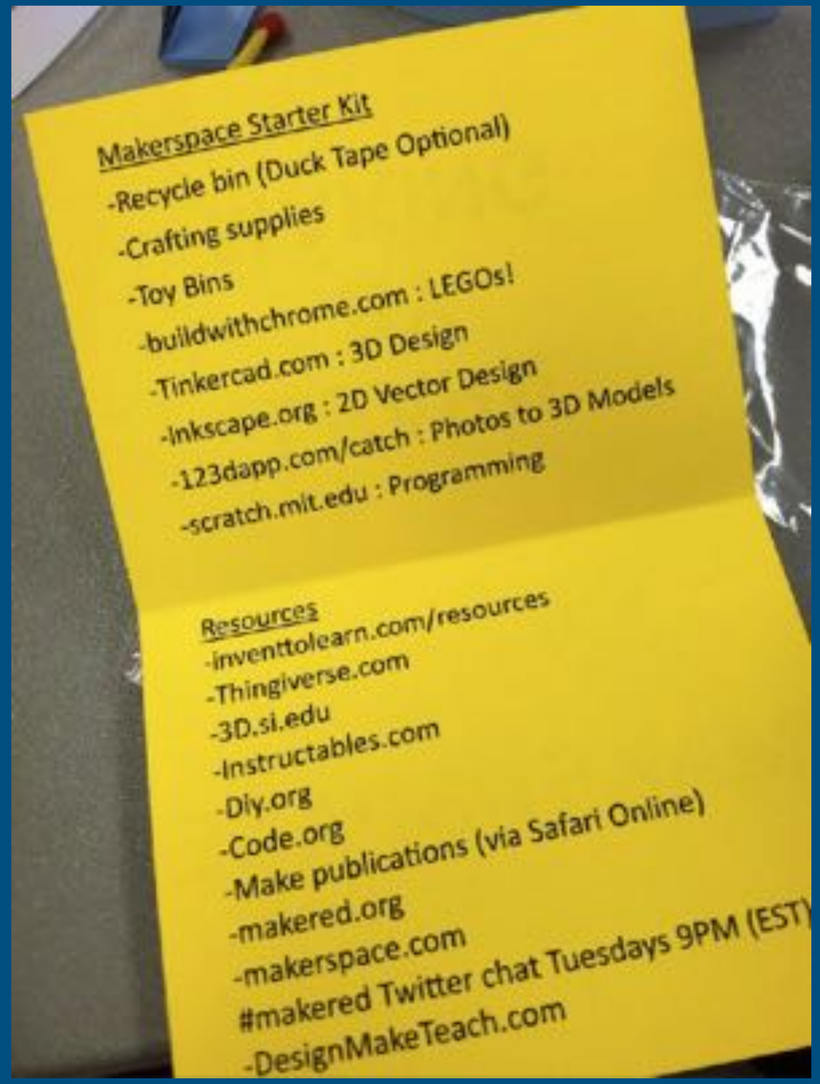
CONNECTED with THE WORLD

Students improve the quality of their work and amplify the impact of their work through three types of connections:

- connections to valuable tools and information;
- connections to others with whom they collaborate; and
- connections with an audience beyond the teacher.

When appropriate, students use technology to make these connections with the world.

Revised July 2015. The concepts and phrasing of the 4 key elements draws from the "Essential Project Design Elements" of Gold Standard Project Based Learning from the Buck Institute for Education. Alan November was an early user of the phrase, "One to the World."



Makerspace Starter Kit

MakerEd.org

Challenge

Create a 90 sec video describing your strategies for fostering Maker Mindset in yourself, students and fellow educators.

https://flipgrid.com/60c2ea

HANDOUTS & CONTACT INFO

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