

Developing Creativity in the Classroom

Dr. Jacie Maslyk, Assistant Superintendent
Hopewell Area School District

#NAESP16



Resources

- All materials for this session are available on my website:
 - www.steam-makers.com
- Check out my STEAM Makers Pinterest page:
 - <https://www.pinterest.com/jaciemaslyk/steam-makers/>
- Please tweet about the session using
#NAESP16
[@DrJacieMaslyk](https://twitter.com/DrJacieMaslyk)

Background

- Varied educational experience
- Early-implementation of dedicated STEAM learning space
- Unique learning ecosystem in Pittsburgh
- Author of a new book on STEAM and Maker Education

Who will win a copy today?

Goals

- **Build an understanding of the importance of STEAM Education and the Maker Movement.**
- **Discover ways to incorporate STEAM Maker learning into the curriculum.**
- **Identify community partners, experts, parents that can enhance STEAM Maker programs.**
- **Engage in hands-on learning to experience the design process.**

***Use the STEAM Action Plan Handout**



STEAM

- STEAM is the thoughtful integration of Science, Technology, Engineering, Art, and Math into the curriculum.
- The philosophy of STEAM revolves around the concept that:

Science & **Technology** interpreted through
Engineering & the **Arts**, all based
in **Mathematical** elements.

(Yakman, 2009)



Making

- An opportunity to learn through hands-on/minds-on work that fosters curiosity, creativity and innovation through messing, building, designing, hacking, and remaking.



Maker Movement

- **“The shift to "making" represents the perfect storm of new technological materials, expanded opportunities, learning through firsthand experience, and the basic human impulse to create.”**

(Gary Stager, 2014)

**A MAKERSPACE
IS A METAPHOR FOR A
UNIQUE LEARNING ENVIRONMENT THAT
ENCOURAGES TINKERING, PLAY
AND OPEN-ENDED EXPLORATION
FOR ALL.**

Laura Fleming

What's the same/different?



Why STEAM and Making?

- Relevant
- Rigorous
- Engaging

Things to Consider

- Where does this fit within the day?
 - In the curriculum?
 - Is it a stand alone course?
 - Or an integrated approach?
- How do you assess it?

M
S T E A M
K
I
N
G

STEAM

Making

Technology
CompetenciesReal-World
Connections

K-1

Rokenbok, Intro
to Coding, Scratch
Jr.

Each grade
level should
begin to
develop skills
in:

Keyboarding
exploration

E-labs, Skype
with zoos,
authors, etc.

2

Rokenbok, K'Nex,
Coding

-woodworking
-circuitry
-sewing
-digital
animation
-re-purposing
and recyclable
art
-building and
design
challenges

Microsoft Word

Micronauts,
Skype with
content experts

3

Snap Circuits, Stop
motion animation

Presentation,
Intro to research

Dolphin Project,
Audubon Society

4

Lego, Roominate,
Goldieblox

Research, Google
Docs

E-Missions

5

Genius Hour,
Robotics

Blogging, Movie
Maker,

Backyard Design
Challenge

6

Hummingbird,
Makey-Makey

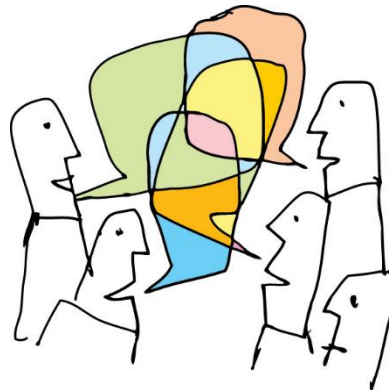
Video Production

Challenger visit,
Rescue mission,
Rocket Launch

Turn and Talk

- **Where have you developed STEAM and Making into the curriculum in meaningful ways?**

Share your successes!



How Do You Assess It?

- Teacher-designed rubrics
- Project-based assessments
- Physical badging
 - Badging system



5 Things to Consider

- **Space**
- **Stuff**
- **Storage**
- **Support**
- **Sustainability**

In Classrooms



In Libraries



On Carts



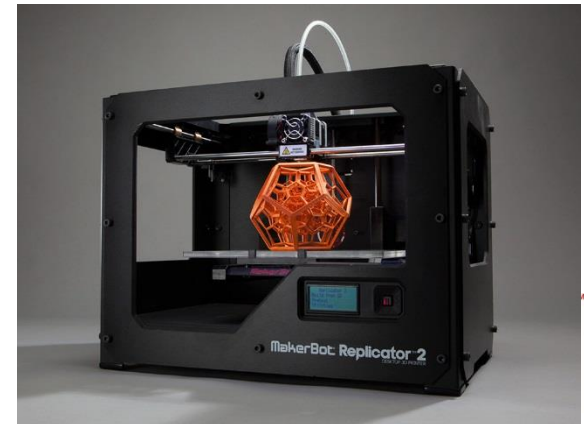
On the Road



Stuff

Makerspace
supply list

- Every makerspace is unique from the physical space to the stuff to the programs.
- Makerspaces can range from no cost/low cost to high-tech/high priced.

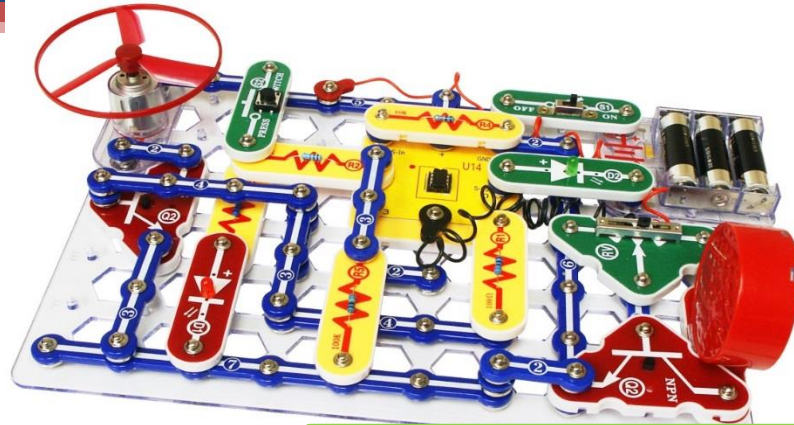


Let's MAKE Something!

- Use the materials provided to create something that represents you as a leader or your school as a place for learning.

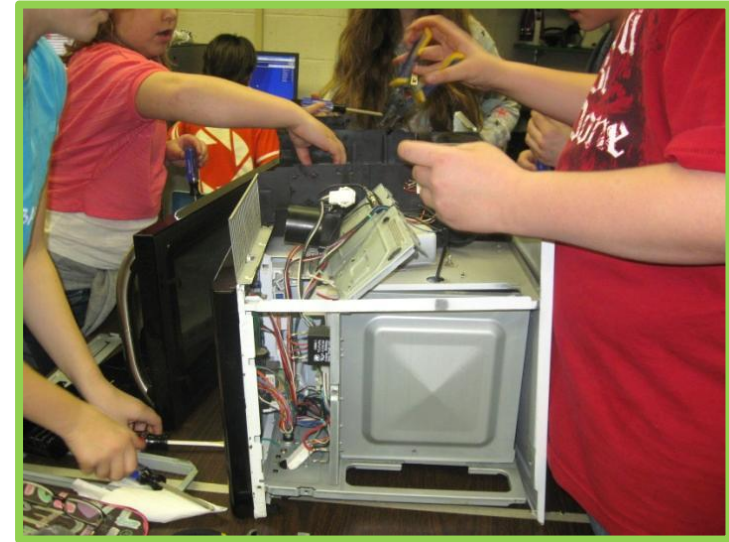
More Stuff

- Scratch
- Rokenbok
- K'Nex
- Snap Circuits
- Lego We Do Robotics
- Fischer Teknik





**Constructing
water filtration
systems**



**Deconstructing
a microwave**

**Learning to
sew and weave**



Week of Making



Storage



Support & Sustainability

- How do we build internal capacity?
 - Funding
 - Resources
 - Staffing



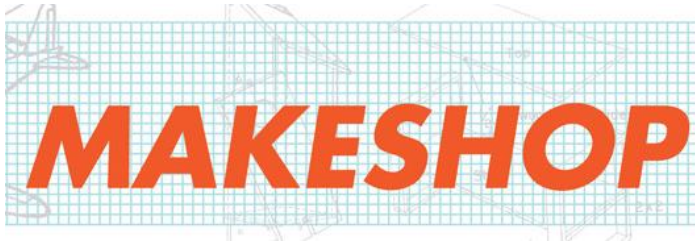
*Consider grants and other free opportunities

Building Capacity for Innovation

3 P's

- People
- Programs
- Partnerships

Professional Development



Selected as 1 of 5 sites in PA to serve as a mobile MAKESHOP© site.

Providing hands-on opportunities for students, teachers, and community members in:

- Woodworking
- Sewing
- Circuitry
- Digital animation



MAKER Boot Camp for teachers

Professional Development



Building “draw-bots”

Learning stop-motion animation



Parent Leadership



Maker Mentors

Connecting with parent +
community makers



Tech Buddy program



Engaging Local Resources



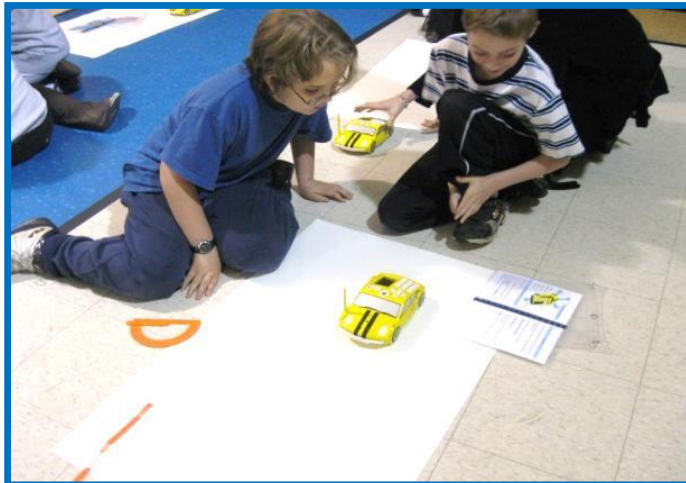
Community, Career & Beyond

- What partnerships have your districts established? In what ways do you incorporate these collaborative relationships into your makerspace?



What does it mean for students?

100%
Engagement



Shifting Our Mindset

Thinking

Building

Design



Experimentation

Collaboration

Discovery



Contact me at maslykj@hopewellarea.org

Follow me on Twitter
[@DrJacieMaslyk](https://twitter.com/DrJacieMaslyk)

www.steam-makers.com

