

# Leadership

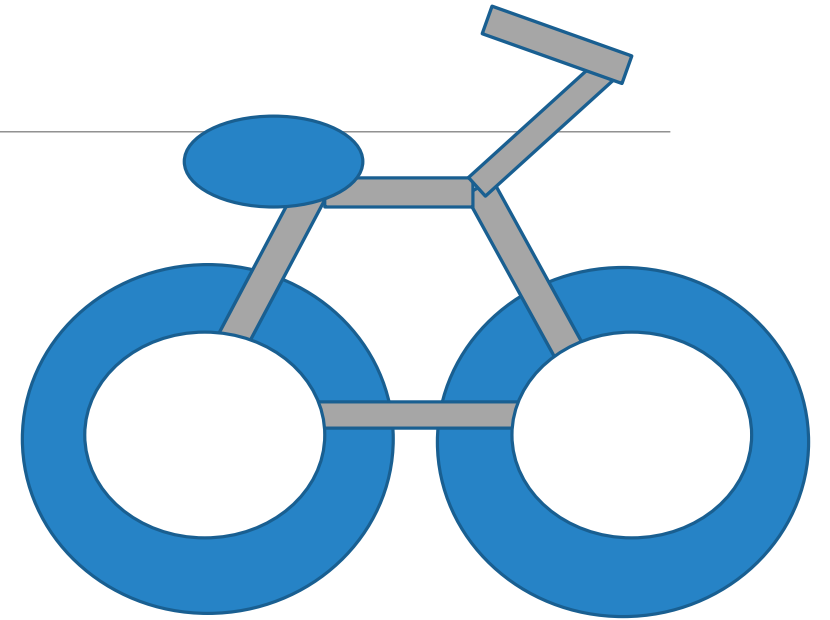
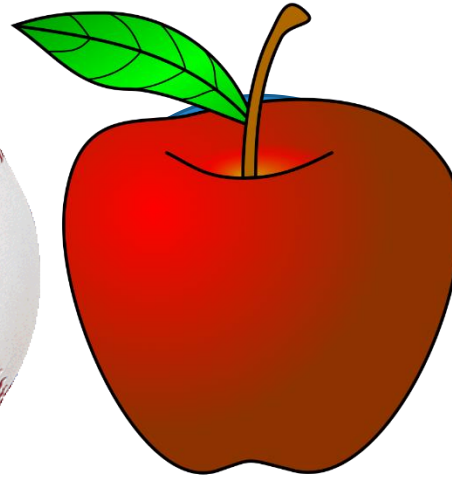
## Supporting Creativity and Innovation in K-12 Schools

PA Principals Conference  
October 2017

Dr. Jacie Maslyk, Assistant Superintendent  
Hopewell Area School District

# Just how creative are you?

---



# Resources

---

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

# My Background

---

- **Teacher-Principal-Central Office**
- **Early-implementation of dedicated STEAM learning space**
- **Author of a book on STEAM and Maker Education**

Who will win a copy today?

# Your Background

---

**I know about STEAM/Making and it is happening in my school.**

**My building has a dedicated space for this type of learning.**

**Innovation and creativity are embraced in my school.**



# Goals

---

## ■ Learner

- Build an understanding of the importance of STEAM Education and the Maker Movement
- Engage in hands-on learning to experience the design process

## ■ Leader

- Provide practical strategies to engage in this work in your own school/district.
- Identify community partners, experts, parents that can enhance STEAM Maker programs

# I REMEMBER

- 
- The infographic features a vertical list of seven items. Each item consists of a percentage in a yellow circle with a blue border, followed by a description in blue text. The background is a light green rectangle with a dashed line and a yellow circle at the top, and an orange header. A horizontal line is drawn across the middle of the infographic.
- 5% OF WHAT I HEAR
  - 10% OF WHAT I READ
  - 20% OF WHAT I HEAR AND READ
  - 30% OF WHAT I AM SHOWN
  - 50% OF WHAT I DISCUSS
  - 75% OF WHAT I DO
  - 90% OF WHAT I TEACH OTHERS



SCIENCE TECHNOLOGY ENGINEERING ART MATHEMATICS

- Requires thoughtful integration 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

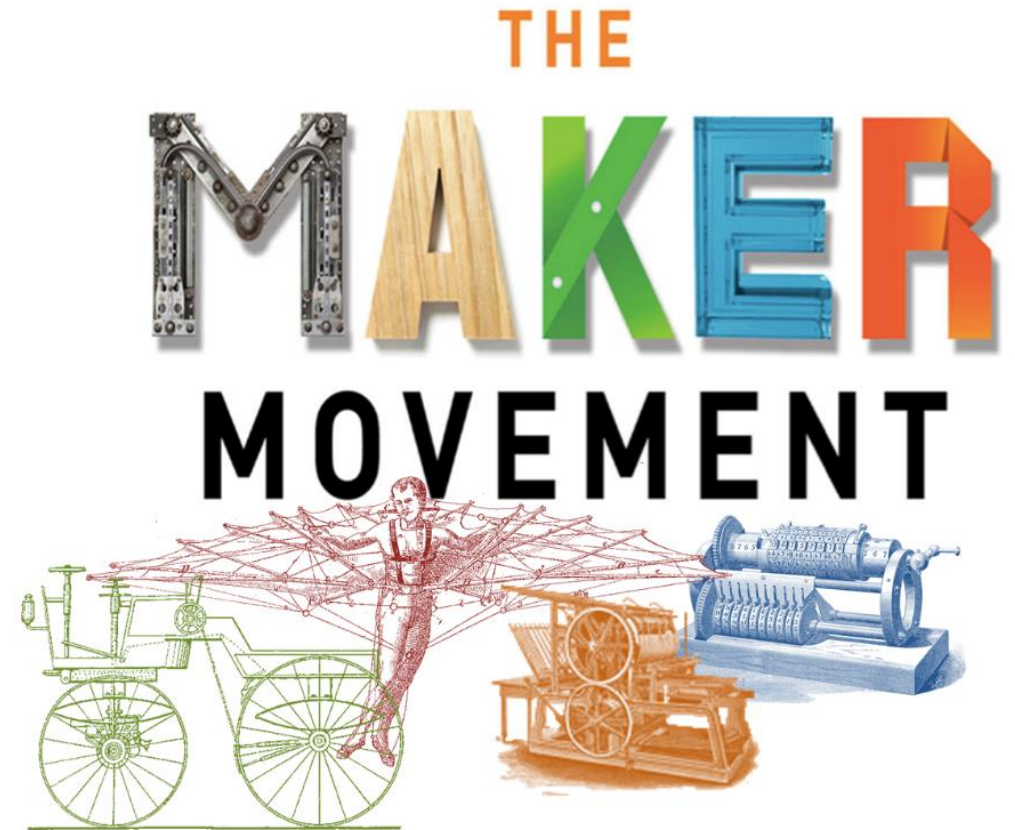
---

**“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)

# What's the same/different?

---



# Why STEAM and Making?

---

- **Relevant**
- **Rigorous**
- **Engaging**
- **Personalized**

# Things to Consider

---

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

M  
S T E A M  
K  
I  
N  
G

# Do You Assess It?

---

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

VEC

BIE



# STEAM

Scratch Jr., BeeBots, Puzzlets,  
Squishy Circuits

Rokenbok, Osmo, Finch  
Robots, Ozobots

Scratch, Snap Circuits, Bloxels,  
Little Bits,

Makey-Makey, Stop motion  
animation, Sphero

Extraordinaires, Lego Robotics,  
K'Nex

Vex IQ, Hummingbird, Drones,  
Virtual Reality

# Making

Each grade level  
should begin to  
develop skills in:

-woodworking

-circuitry

-sewing

-digital animation

-deconstruction

-re-purposing and  
recyclable art

-building and design  
challenges

K-1

2

3

4

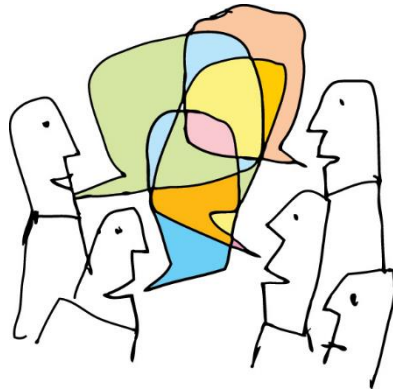
5

6

# Turn and Talk

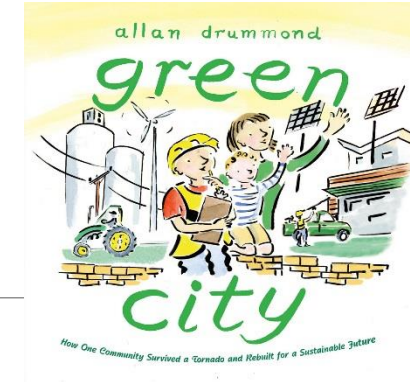
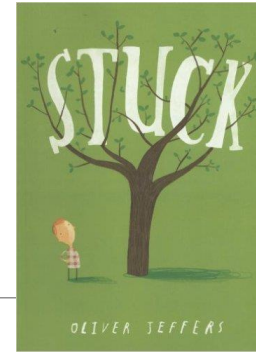
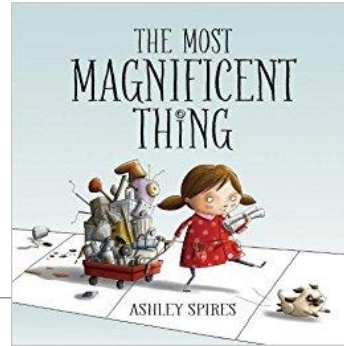
---

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





# Dispositions



The Most Magnificent Thing by Ashley Spires

Stuck by Oliver Jeffers

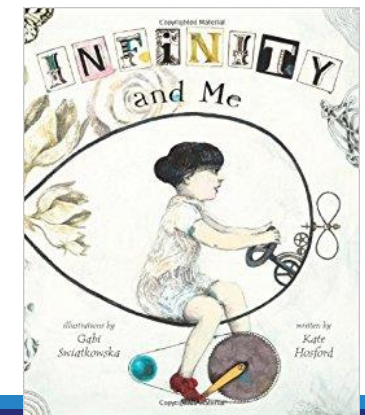
<https://www.youtube.com/watch?v=hipx6HJs4XQ>

Green City by Allan Drummond

Marvelous Thing That Came From a Spring by Gilbert Ford

Swap! By Steve Light

Infinity and Me by Kate Hosford



# 5 Things to Consider

---

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

(Range & Schmidt, 2014)

# Innovative Learning Spaces

should encourage students to

**Collaborate**

**Create**

**Contribute**

# In Classrooms









# On Carts





# On the Road



# What's your PURPOSE ?

---

- Integrate STEAM and Making to:
  - Challenge students
  - Build problem solving skills
  - Establish meaningful connections that build and expand student understanding

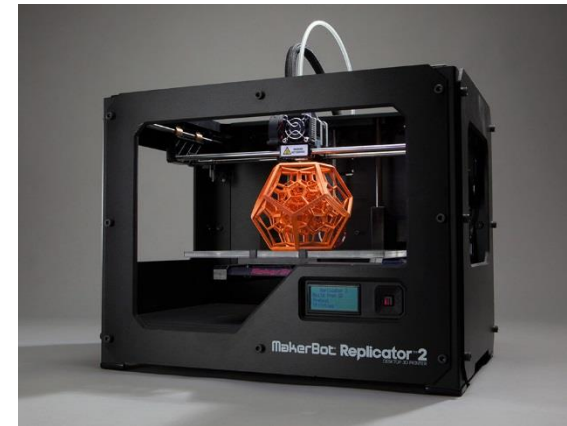


# Stuff

---



- 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 educator or your school as a place for learning.

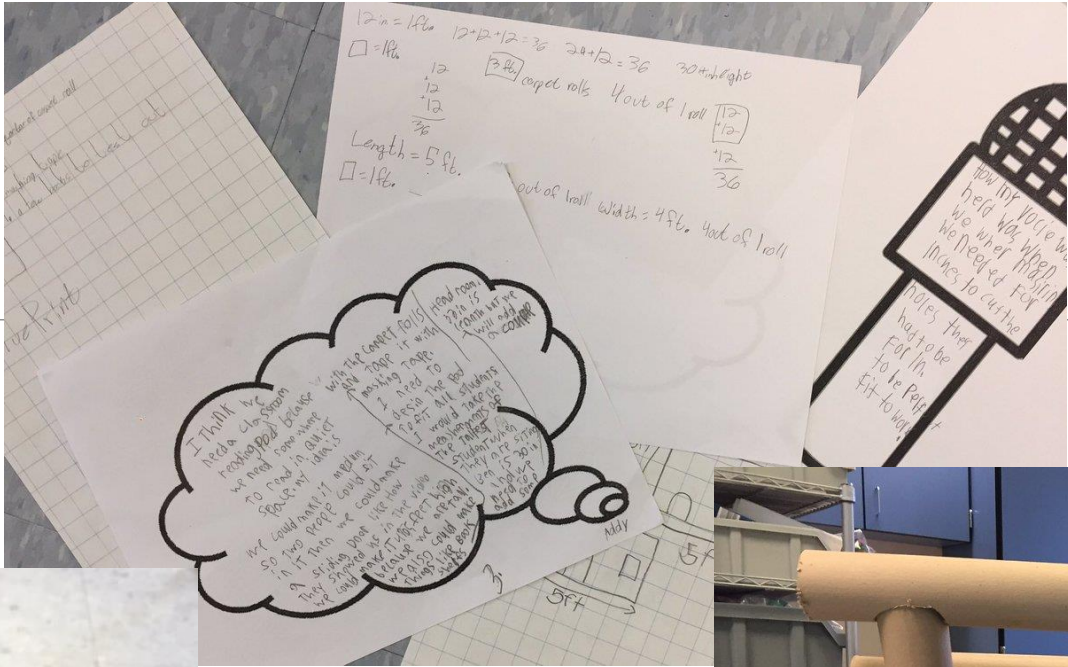
# More Stuff

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





# Design and Engineering



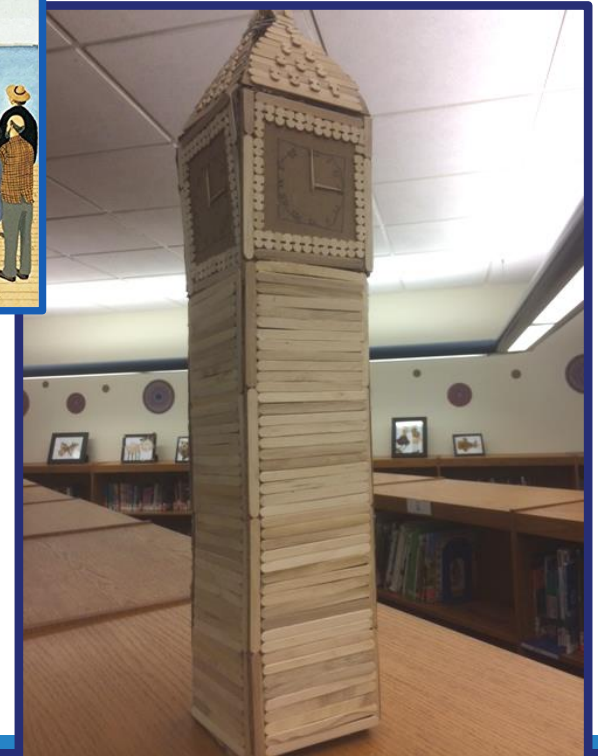
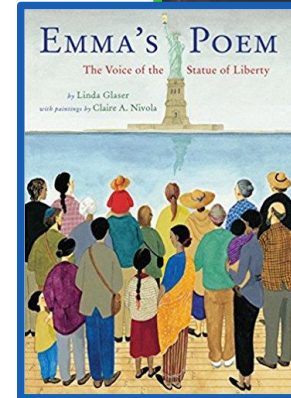
# Video Production and Animation

- Stikbot
- Green screens





# Making in Unexpected Places





# Storage



# Support & Sustainability

---

- **How do we build internal capacity?**
  - **Funding**
  - **Resources**
  - **Staffing**
  - **Professional Learning Networks**





# Professional Development

---



Check out my  
makerspace course !



Allegheny Intermediate Unit

# Professional Development



# Find Your Network

---

- Remake Learning

- A professional network of over 300 organizations and innovators working together to shape the future of teaching and learning.

- Beaver County Innovation & Learning Consortium

- @BeaverCountyILC





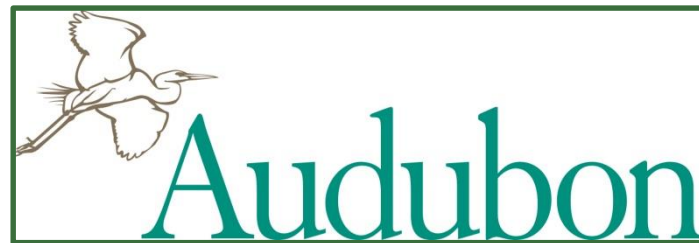
# Maker Mentors

Connecting with parent and community makers



Tech Buddy program

# Engaging Local Resources



# What does it mean for students?



100%  
Engagement





# Reflect

---

- **WOW, Wonder, Want**
- **Share your feedback in a tweet.**



---

Contact me at [maslykj@hopewellarea.org](mailto:maslykj@hopewellarea.org)

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

[www.steam-makers.com](http://www.steam-makers.com)

[#STEAMMakerChat](https://twitter.com/STEAMMakerChat)  
1<sup>st</sup> Monday of every month  
7:00-7:30pm

Who will  
win a  
copy?

