

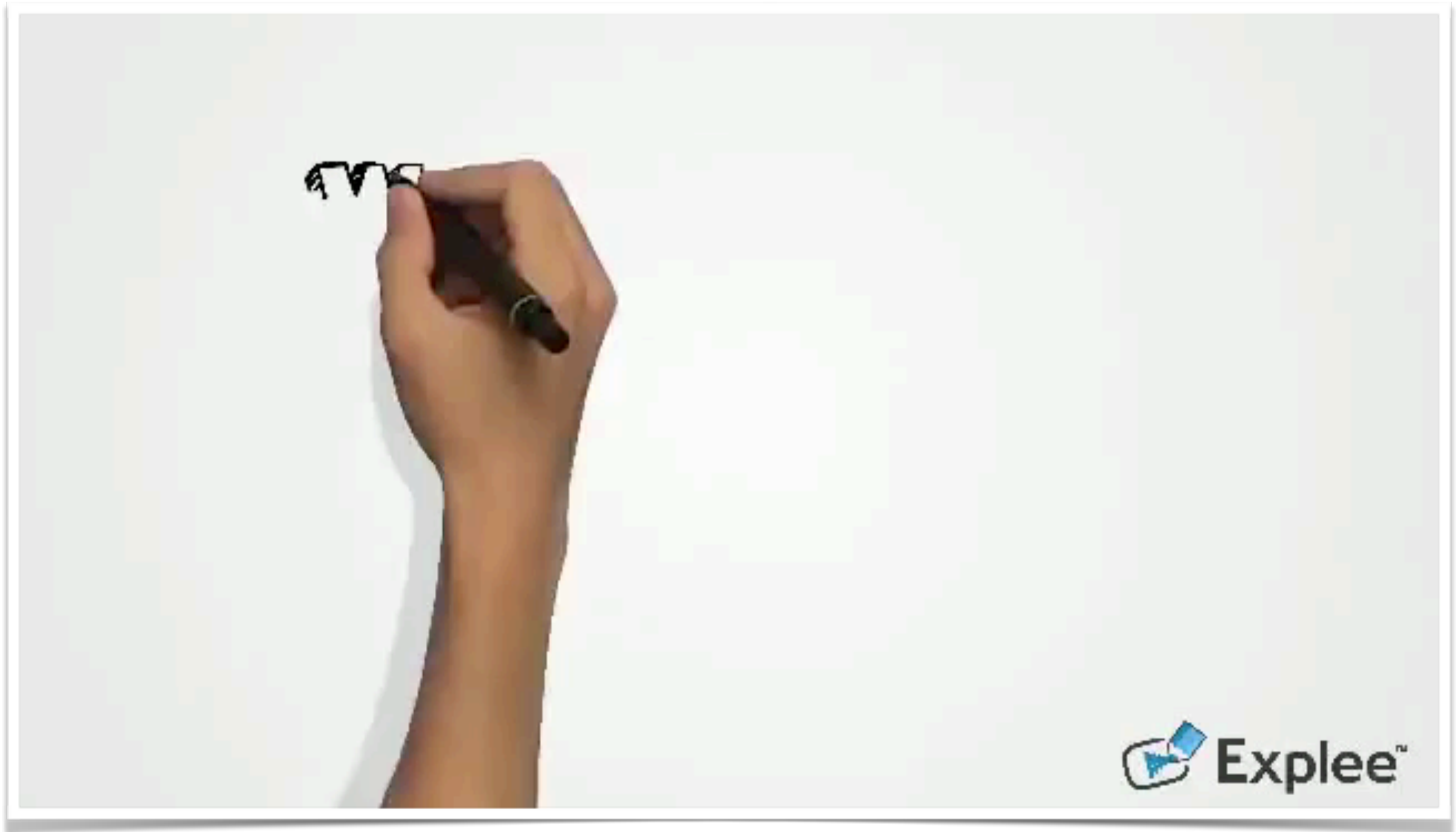
# MakerSpaces 101



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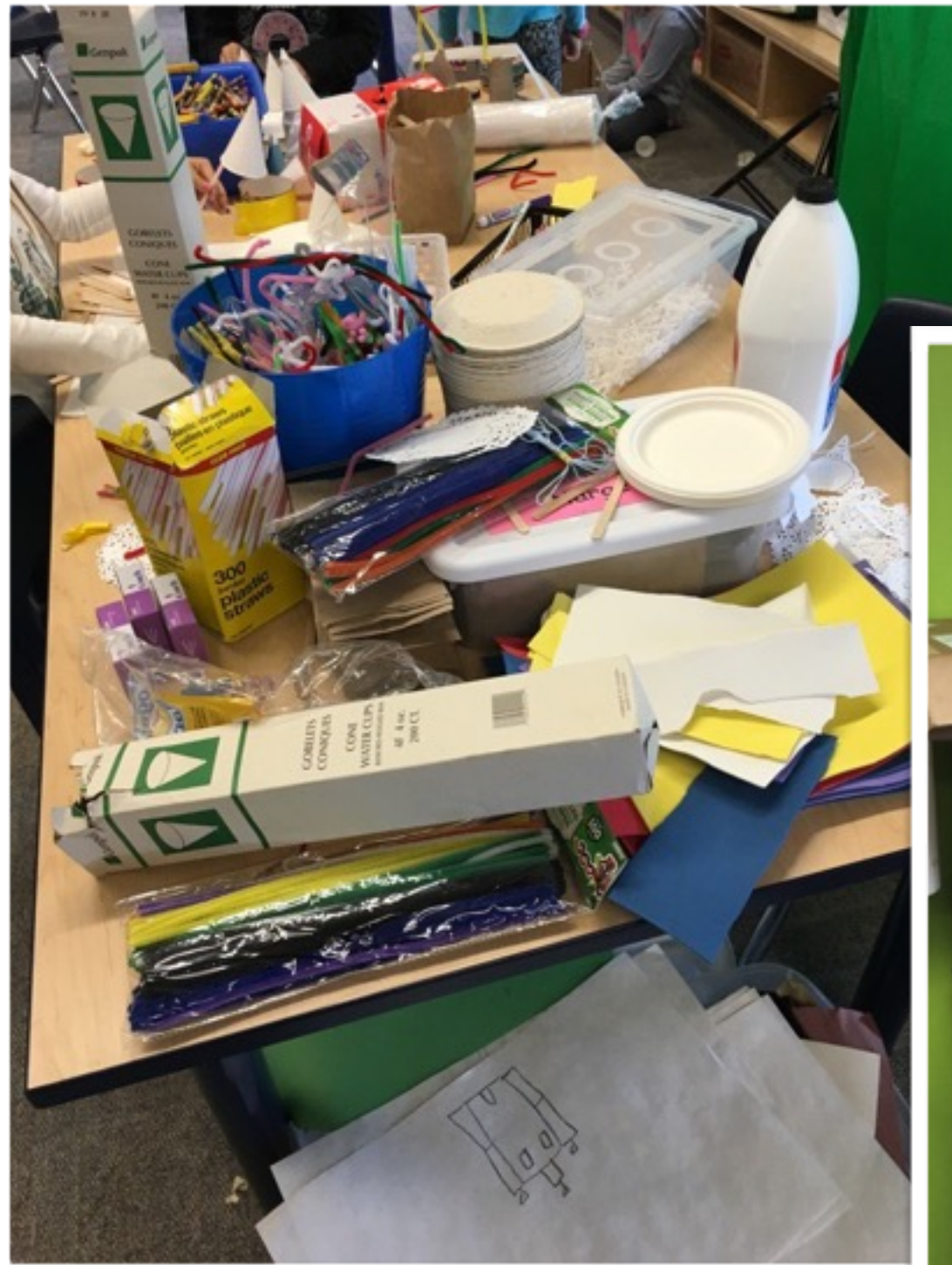
Distinguished  
Educator



What is a MakerSpace? YouTube video from: <https://www.youtube.com/watch?v=NLEJLOB6fDw>


A **makerspace** is a unique  
learning environment  
that encourages  
tinkering, play, and  
**open-ended** exploration  
for **ALL**.





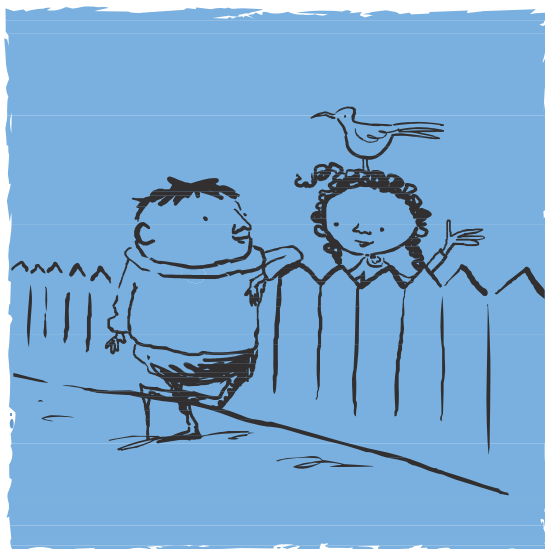
**WHY?**





# We're taking teaching and learning Above & Beyond

Today's students are moving beyond the basics  
and embracing the 4C's — “super skills” for the 21st century!



## Communication

Sharing thoughts, questions,  
ideas, and solutions



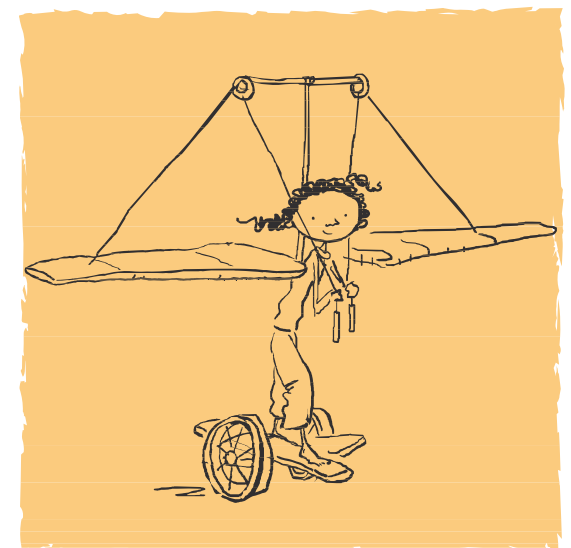
## Collaboration

Working together to reach a  
goal — putting talent, expertise,  
and smarts to work



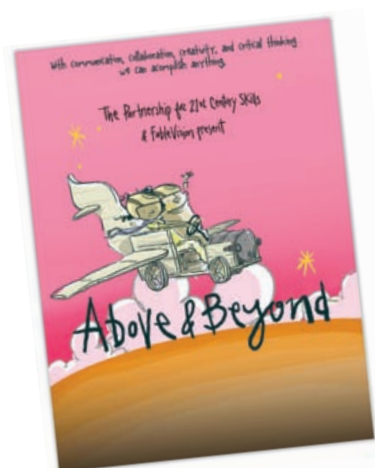
## Critical Thinking

Looking at problems in  
a new way, linking learning  
across subjects & disciplines



## Creativity

Trying new approaches  
to get things done equals  
innovation & invention




For more 4C resources from  
the Partnership for 21st Century Skills,  
including the animated film ABOVE & BEYOND  
by Peter H. Reynolds & FableVision, journey to  
[www.p21.org/4Cs](http://www.p21.org/4Cs)



PARTNERSHIP FOR  
21ST CENTURY SKILLS





## Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

# Science and Engineering Practices

Asking questions and  
defining problems

Developing and using models

Planning and carrying  
out investigations

Analyzing and interpreting data

Using mathematics and  
computational thinking

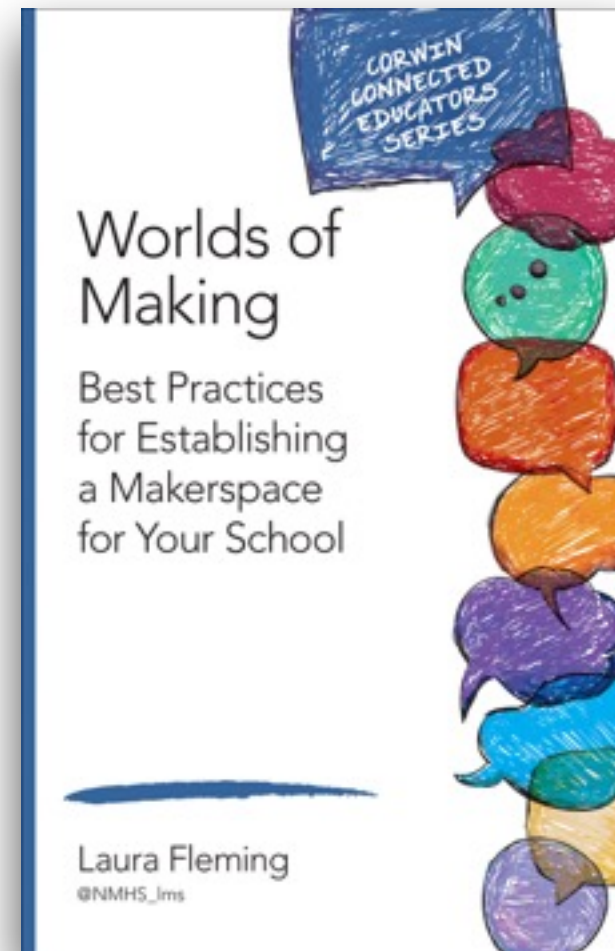
Constructing explanations  
and designing solutions

Engaging in argument from evidence

Obtaining, evaluating, and  
communicating information



# Worlds of Making Framework: Choosing the Right Products for Your Makerspace





# M

## Mobility

Does the product support free-range learning and liberate learners from the limitations of a physical makerspace, therefore increasing equity and access?



A

# Allows for Open-Ended Exploration

Is the product limited to step-by-step directions, or does it maximize inquiry by allowing the opportunity for open-ended exploration?



# K

# Knowledge of Student Needs, Wants & Interests

Do you understand your learners?

Does the product connect to the needs, wants and interests of your students?



# E

## Empowerment & Engagement

Does the product empower ALL students by meeting them where they are? Does it have a low-barrier of entry for engagement?

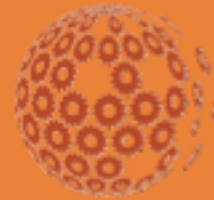




# R

## Relevance

Does the product have relevance to your school community and/or global trends and best practices?



WWW.WORLDSOFMAKING.COM

# *For those that like to solve puzzles...*

- Square Puzzles
- Mancala
- Flexi Puzzle
- Geobrix
- IQ Fit
- IQ Twist
- On the Dot





# *For those that are creative...*

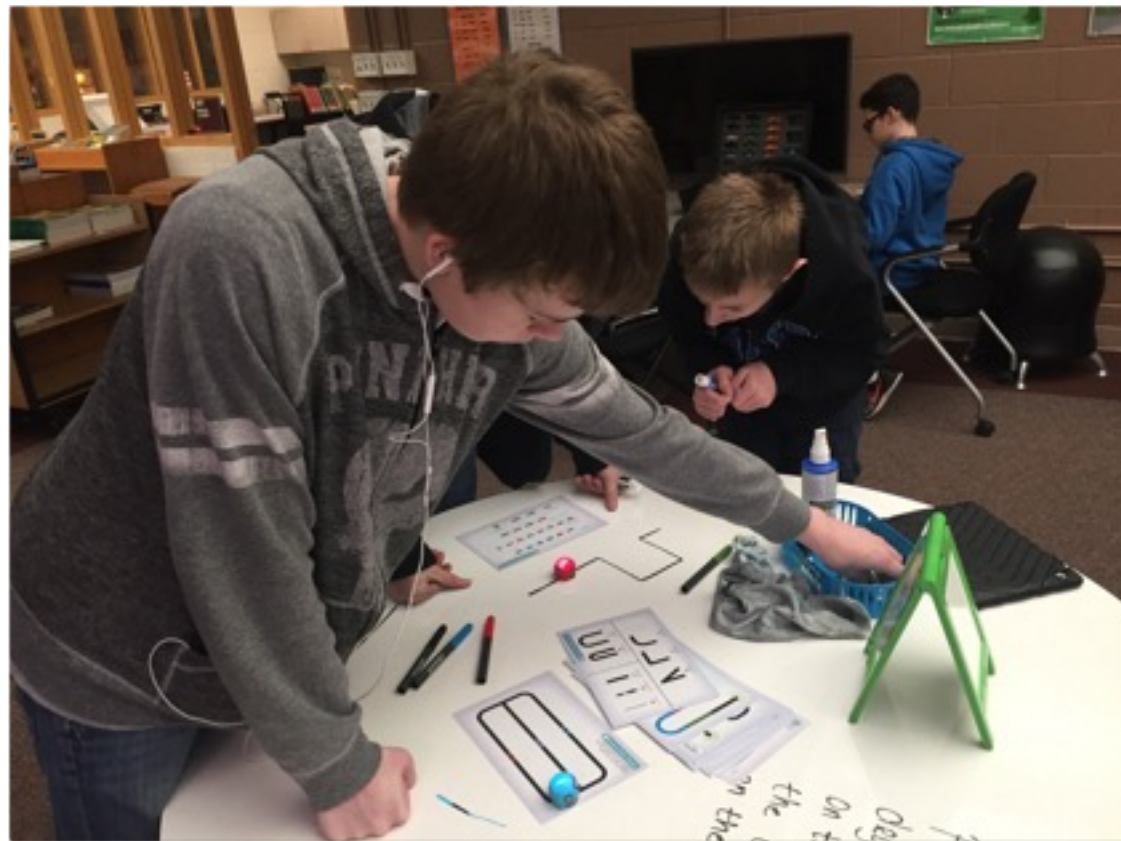
- Origami
- Adult Coloring Books



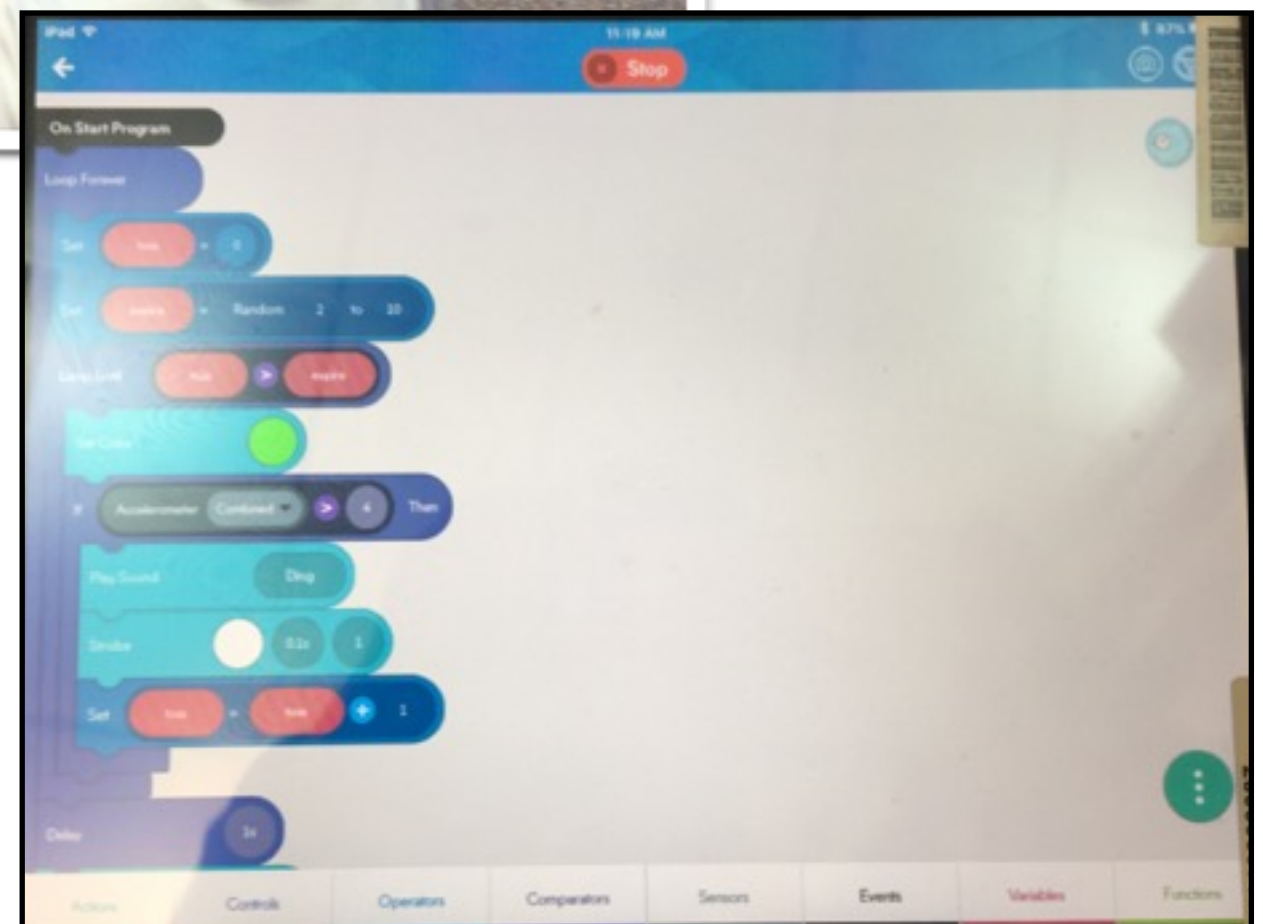


# *For those that enjoy Coding...*

- Ozobot
- Dash
- Sphero
- Swift Playground
- Code.org



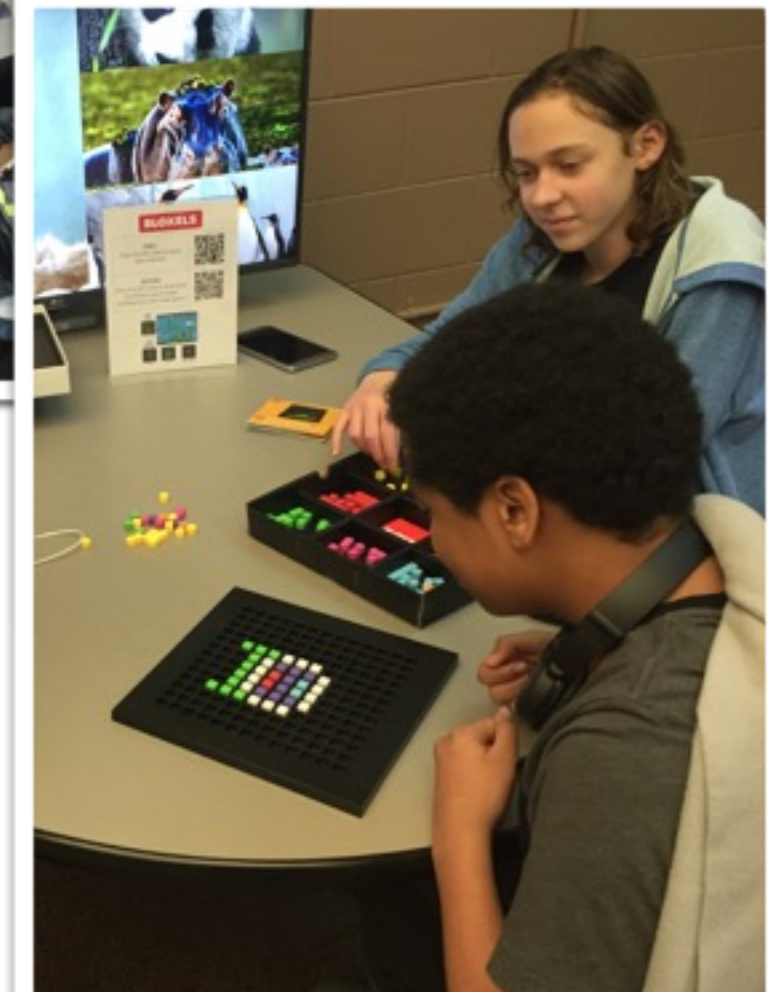






# *And everyone else...*

- Keva Contraptions
- Keva Brain Builders
- Gravity Maze
- Laser Maze
- little Bits
- Snap Circuits
- Bloxels
- Stop Motion Animation



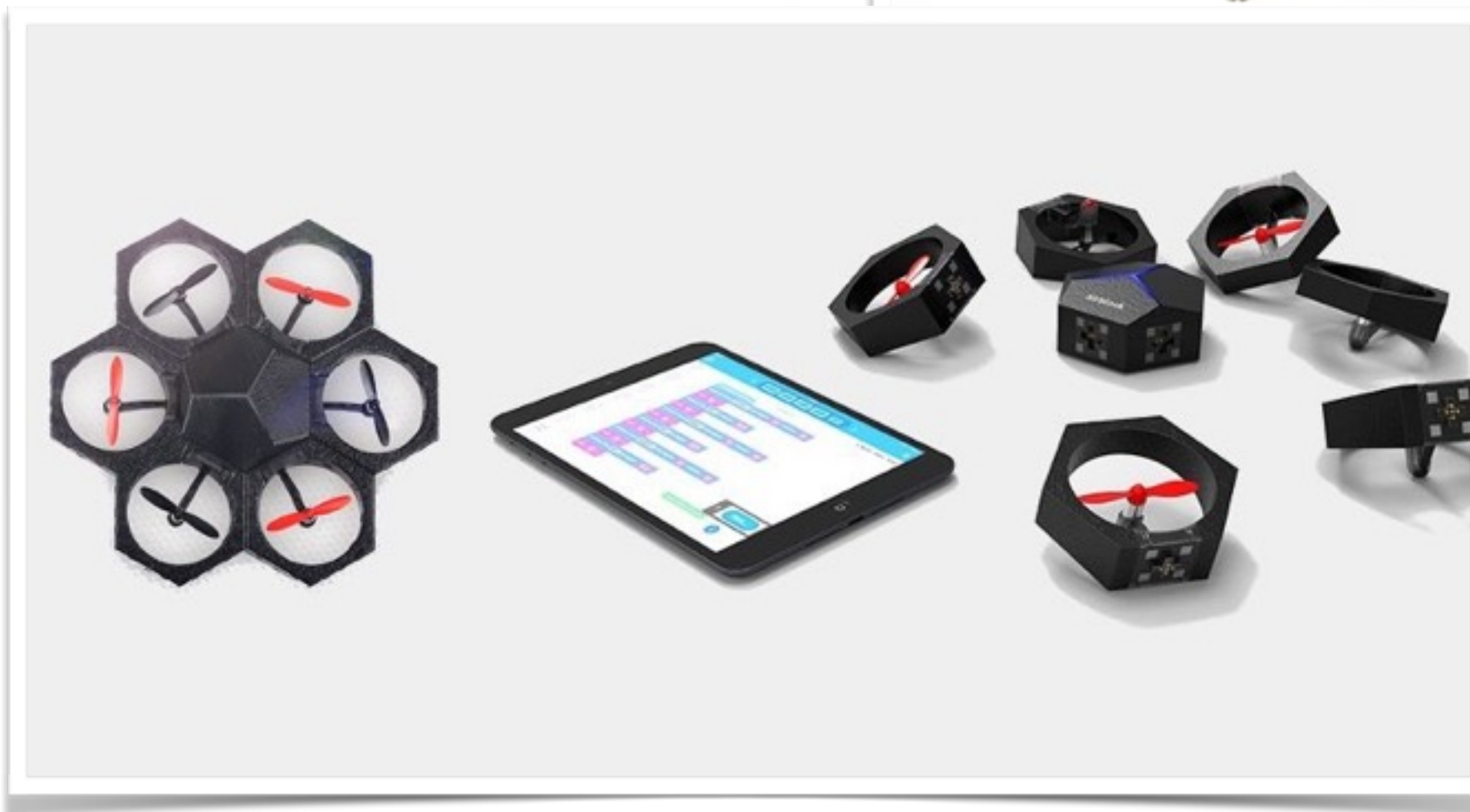
# *Last but not least... Design Challenges*

- The Marshmallow Challenge
- Pom Pom Drop Stem Challenge



# *Coming soon... DRONES*

- Flybrix from Lego
- Airblock





# *Things to consider...*

- When?
- High Tech or Low Tech?
- Low Entry/High Ceiling Options
- Cost
- Managing the “stuff”
  - Little pieces get lost
- Storing the “stuff”



# *Tips & Tricks*

- Start small
- Table Tents
- QR Codes
- Reused magazine pages = Origami paper
- Provide Task Cards
- Competition
- Laminate





# *What I've learned...*

- I LOVE Ikea!
- At first, each teacher needs a personal invitation.
- Student buy-in? No problem!
- Change-up challenges



**TIME TO PLAY!**