

What great children's books or literature selections do you use to connect STEAM and Making?

- <https://padlet.com/jmaslyk1/tmhfcf8rpy8z>



# INNOVATION LITERACY

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Incorporating Children's Literature into STEAM and Making Practices  
Three Rivers Educational Technology Conference

#TRET17

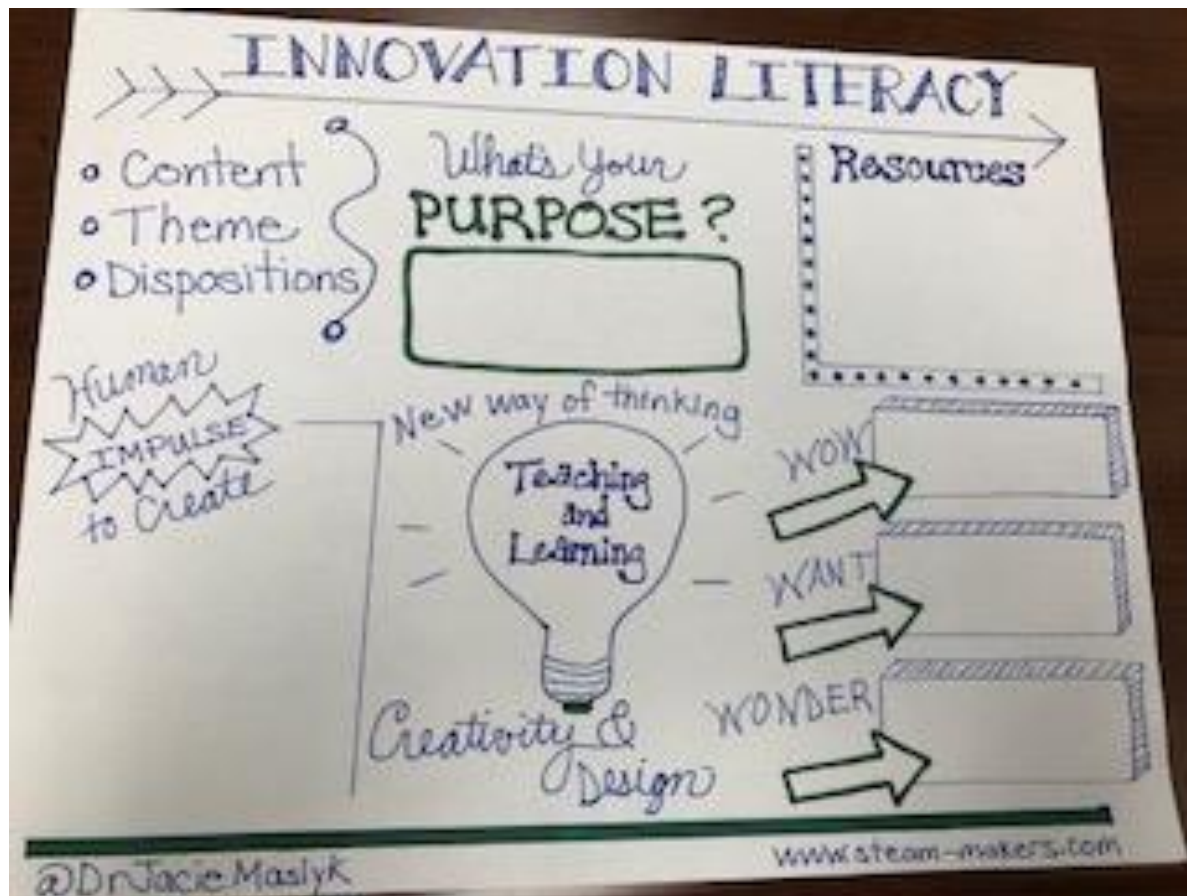
Dr. Jacie Maslyk

Assistant Superintendent

Hopewell Area School District, Pennsylvania

# Goals

- **Build an understanding of the importance of STEAM Education and the Maker Movement**
- **Discover ways to incorporate STEAM Maker learning into English Language Arts**
- **Engage in hands-on learning connected to children's literature**



# Resources

- All materials for this session are 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 using #TRETc17

- @DrJacieMaslyk

# Formative Assessment

- I know about STEAM and use it in my classroom/school.
- Hands-on making is a part of my instructional practice.
- Innovation and creativity are embraced in my school/classroom.



## ( Innovation Literacy )

A way of thinking that creates  
new experiences around literacy  
teaching and learning through  
creativity and design.

- @DrJacieMaslyk

# I REMEMBER

- 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





Reading is an active,  
imaginative act; it takes work.

Khaled Hosseini

 quotzfancy



SCIENCE TECHNOLOGY ENGINEERING ART MATHEMATICS

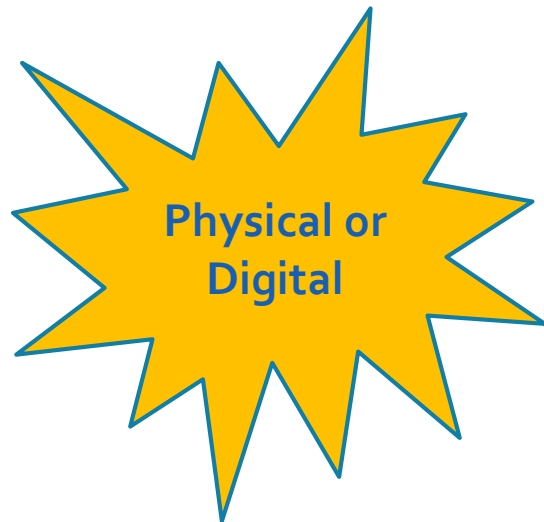
- Requires thoughtful integration into the curriculum
- Revolves around the idea that:

**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.”

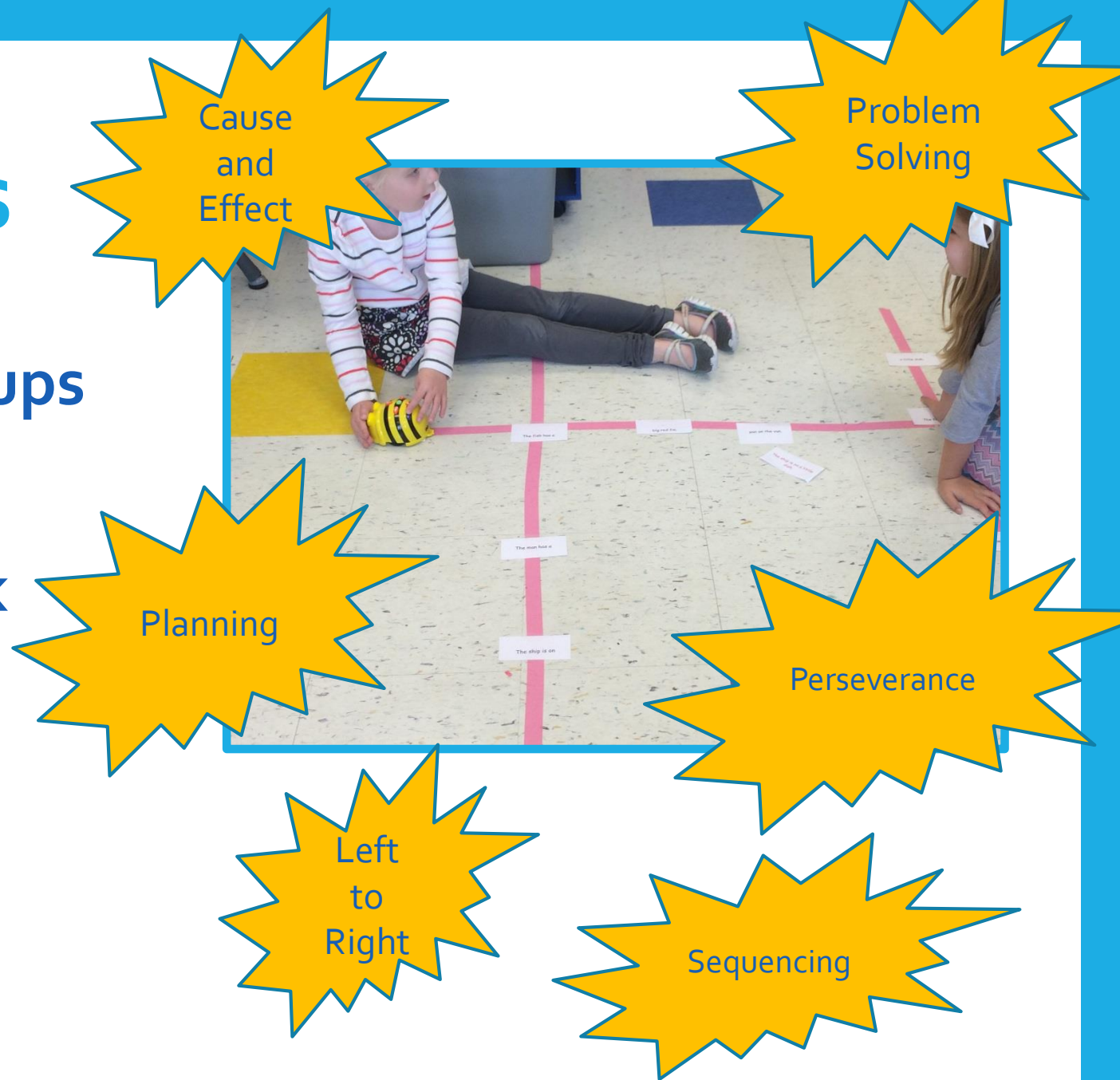
(Gary Stager, 2014)

# Why STEAM and the Maker Movement?

- **Relevant**
- **Rigorous**
- **Empowering**
- **Personalized**

# Learning Benefits

- Work collaborative in groups
- Follow a plan
- Give and receive feedback
- Fail and persevere
- Promotes the 4 Cs



# What's your PURPOSE ?

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



# STEAM

K-1 Scratch Jr., BeeBots, Puzzlets,  
Squishy Circuits

2 Rokenbok, Osmo, Finch  
Robots, Ozobots, Lego We-Do

3 Scratch, Snap Circuits, Bloxels,  
Little Bits

4 Makey-Makey, Stop motion  
animation

5 Sphero, K'Nex, Extraordinaires

6 Vex IQ, Hummingbird, Drones

# 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

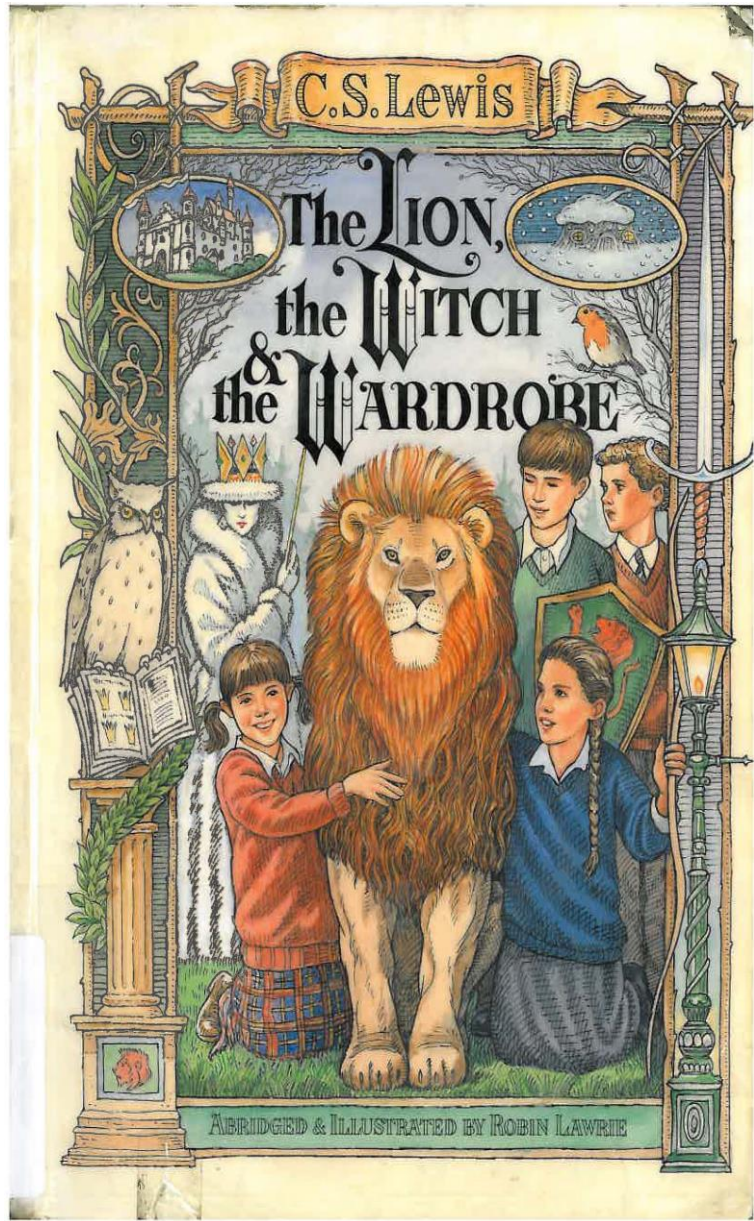
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4

5

6






# 3 Literacy Connections

- Content
- Theme
- Dispositions

# Content

- Iggy Peck Architect by Andrea Beaty
- Ada's Ideas by Fiona Robinson
- What Do You Do With an Idea? By Kobi Yamada
- Papa's Mechanical Fish by Candace Fleming
- Ideas Are All Around by Philip Stead
- If I Built a Car by Chris Van Dusen
- Violet the Pilot by Steve Breen



Explore what  
the characters  
are doing in  
the story.

# Theme

- Not a Box by Antionette Portis
- Block City by Robert Louis Stevenson
- What To Do With a Box? By Jane Yolen and Chris Sheban
- Just How Long Can a Long String Be? By Keith Baker
- The Gardener by Sarah Stewart
- Doug Unplugged by Dan Yaccarino
- When I Build With Blocks by Niki Alling




Create in the  
medium  
featured in the  
story.



# 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
- Ish by Peter Reynolds
- Infinity and Me by Kate Hosford



Develop the  
mindset of the  
characters in  
the story.

# Secondary Literature Selections

## Content and Dispositions

- The Giver
- Ender's Game
- Long Walk to Water
- The Hobbit
- Lord of the Flies
- Adventures of Tom Sawyer
- To Kill a Mockingbird



# Let's Make !

- Use the cards to think about a popular character from children's literature.
- Discuss what problems this character might need to solve.
- Design something to help this character.
  - Build your solution.

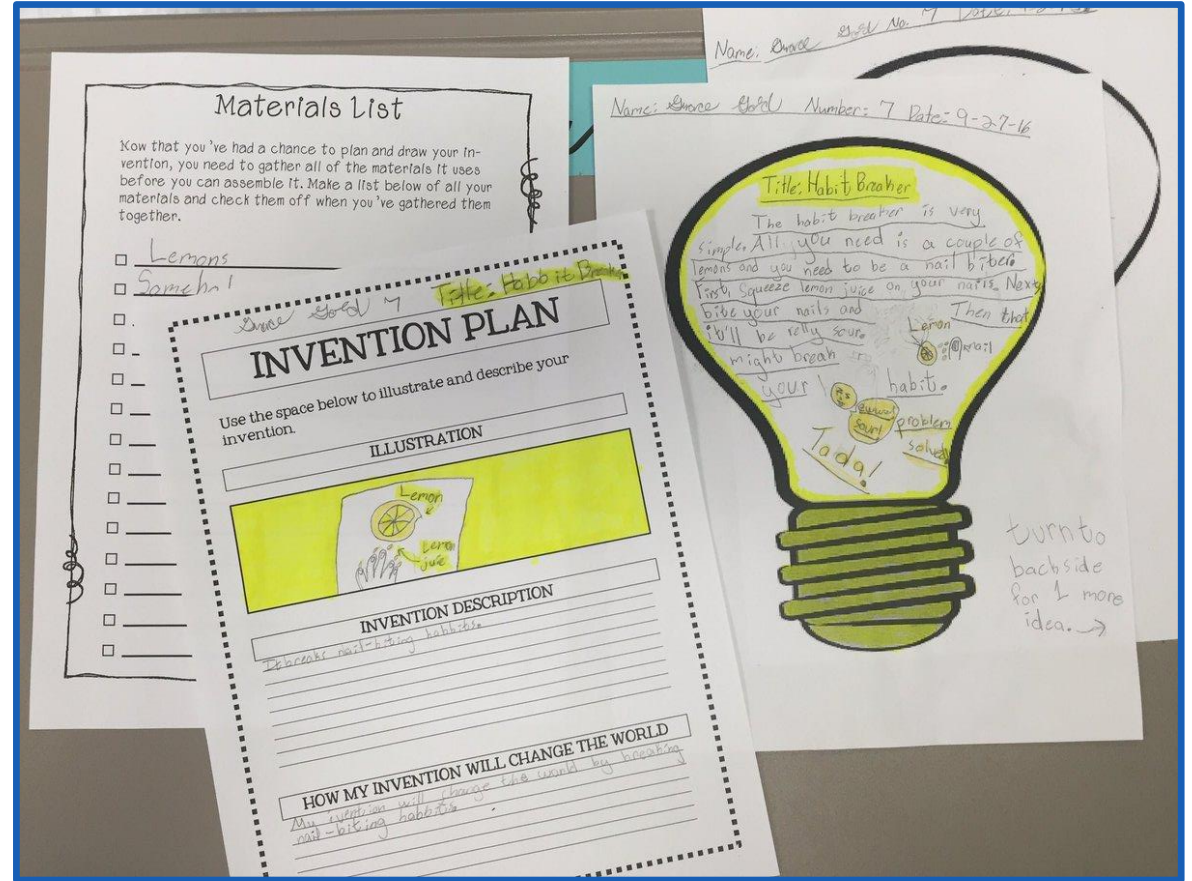
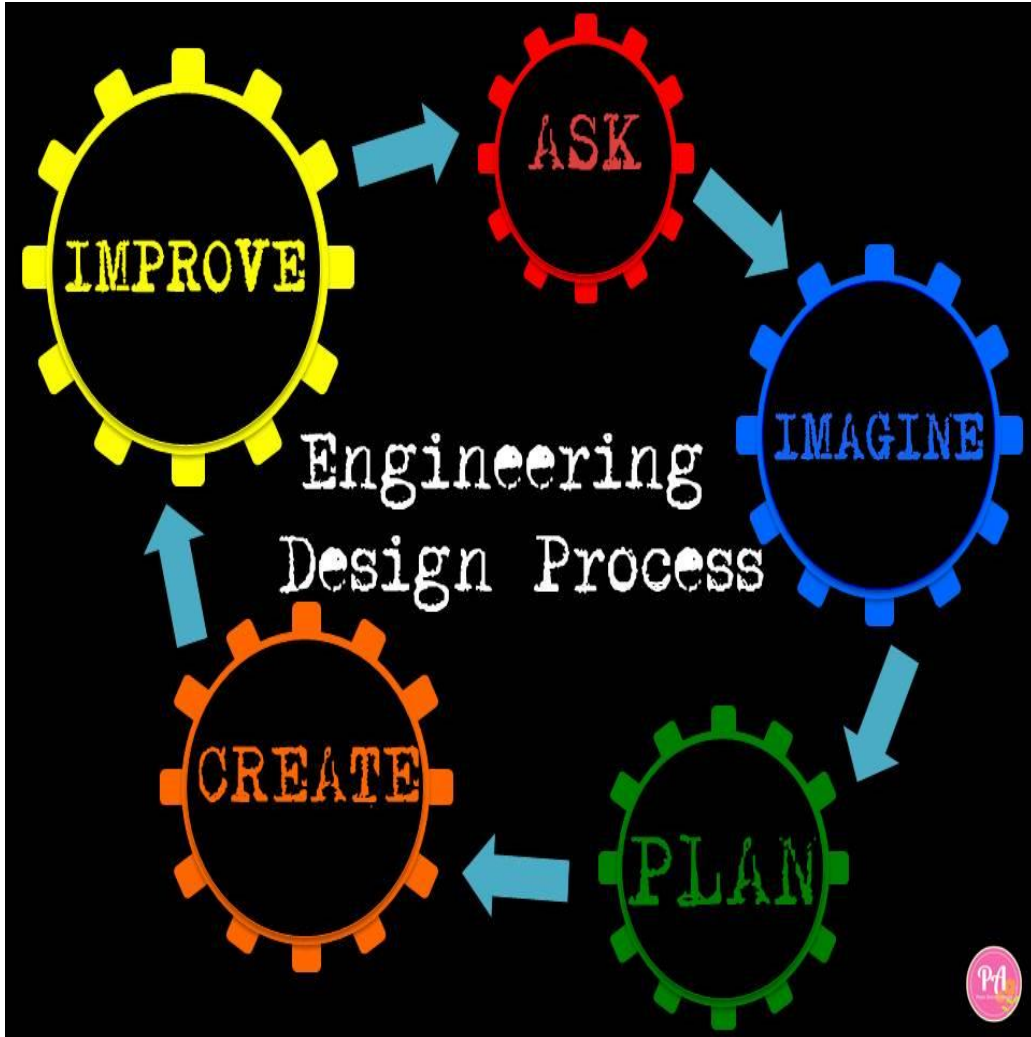


# Simple Ways to Add Making to ELA

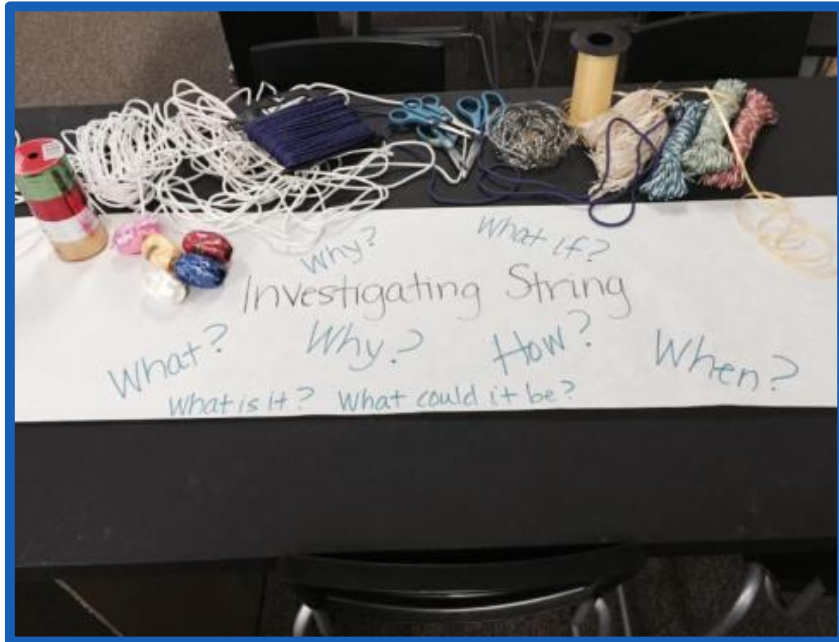
- Create a new ending to a story using video animation
- Build a model to represent content vocabulary
- Bring the character to life through design/draw/build
- Construct a 3D scene of a story
- Design a solution for a problem a character is having

BOOK	AUTHOR	MAKE IT!	A LITTLE INSPIRATION	QR CODE
<i>The Miraculous Journey of Edward Tulane</i>	Kate DiCamillo	Re-create a scene from the story for Reader's Theater including creating costumes, scenery, props, backdrop.	There are lots of resources surrounding this <i>Global Read Aloud</i> Book from 2014: <a href="http://www.edwardtulane.com">http://www.edwardtulane.com</a> <a href="https://www.pinterest.com/emilybstarkey/miraculous-journey-of-edward-tulane">https://www.pinterest.com/emilybstarkey/miraculous-journey-of-edward-tulane</a>	 Edward Tulane  Edward Tulane Pinterest
<i>Sbb! We Have a Plan</i>	Haughton	Learn about the design process.	PBS Design Squad <a href="http://pbskids.org/designsquad">http://pbskids.org/designsquad</a>	 PBS Design Squad
<i>The Great Kapok Tree</i>	Lynne Cherry	Build a model of the layers of the rainforest.	Here's a great Prezi with a link to a fascinating YouTube video: <a href="https://prezi.com/phh12comcrpf/the-great-kapok-tree/#">https://prezi.com/phh12comcrpf/the-great-kapok-tree/#</a>	 The Great Kapok Tree Prezi
<i>Not a Box</i>	Antoinette Portis	Use recycled materials to create a "not a" story; for example, not a button, not a battery, not a thread.	Try these bookmaking websites to design and publish books: <a href="http://www.storyjumper.com">http://www.storyjumper.com</a> <a href="https://www.mystorybook.com">https://www.mystorybook.com</a> <a href="https://storybird.com">https://storybird.com</a>	 Storyjumper  My Storybook  Storybird
<i>The Boy Who Harnessed the Wind</i>	William Kamkwamba	Build a windmill.	<a href="http://tryengineering.org/lesson-plans/working-wind-energy">http://tryengineering.org/lesson-plans/working-wind-energy</a> <a href="http://learn.kidwind.org/learn/science_fair_projects">http://learn.kidwind.org/learn/science_fair_projects</a>	 Try Engineering

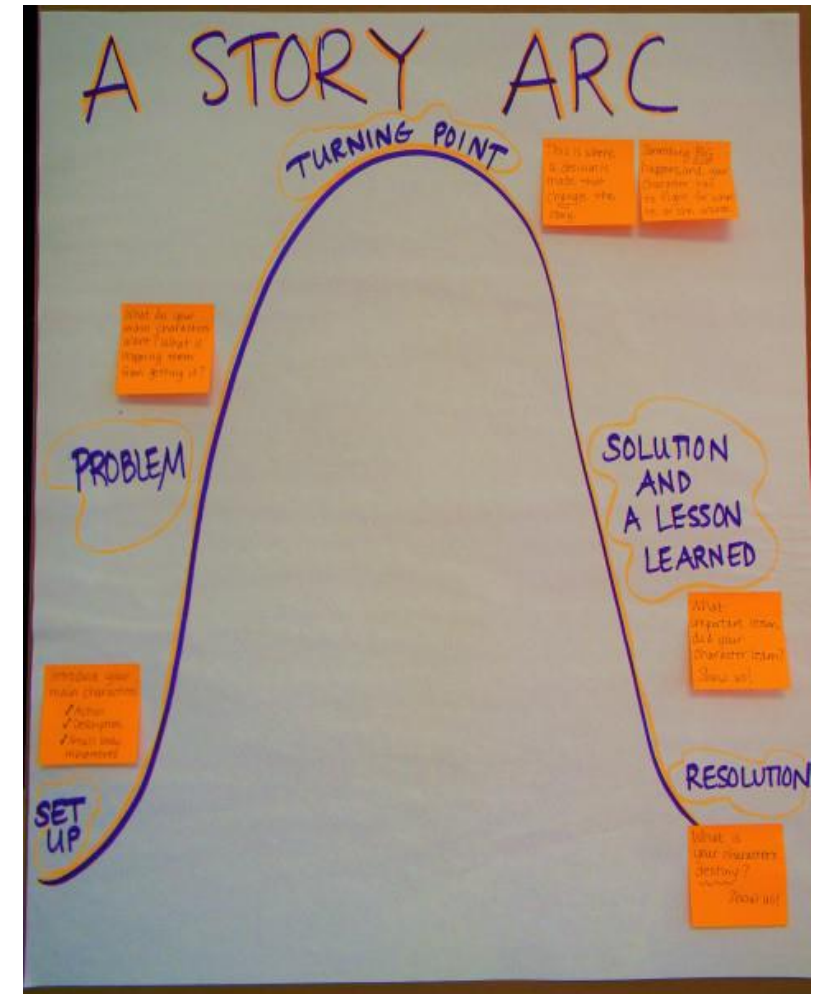




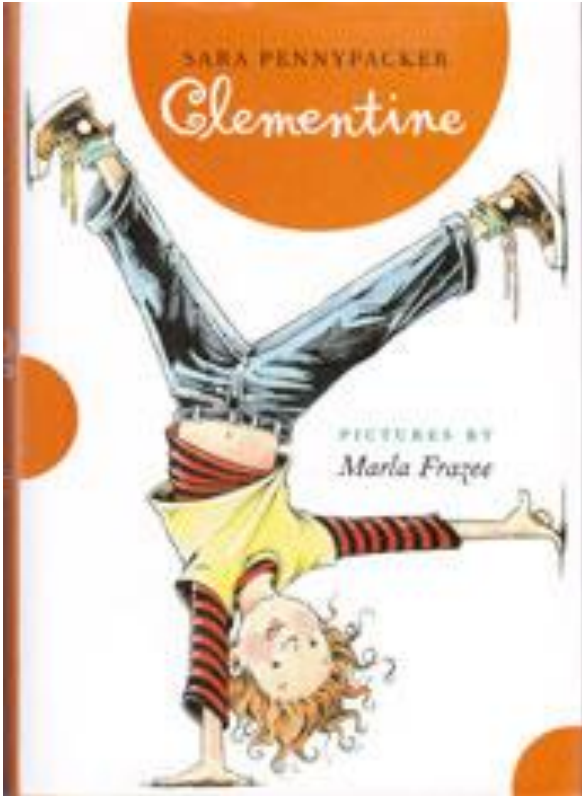
# Tinker Trays



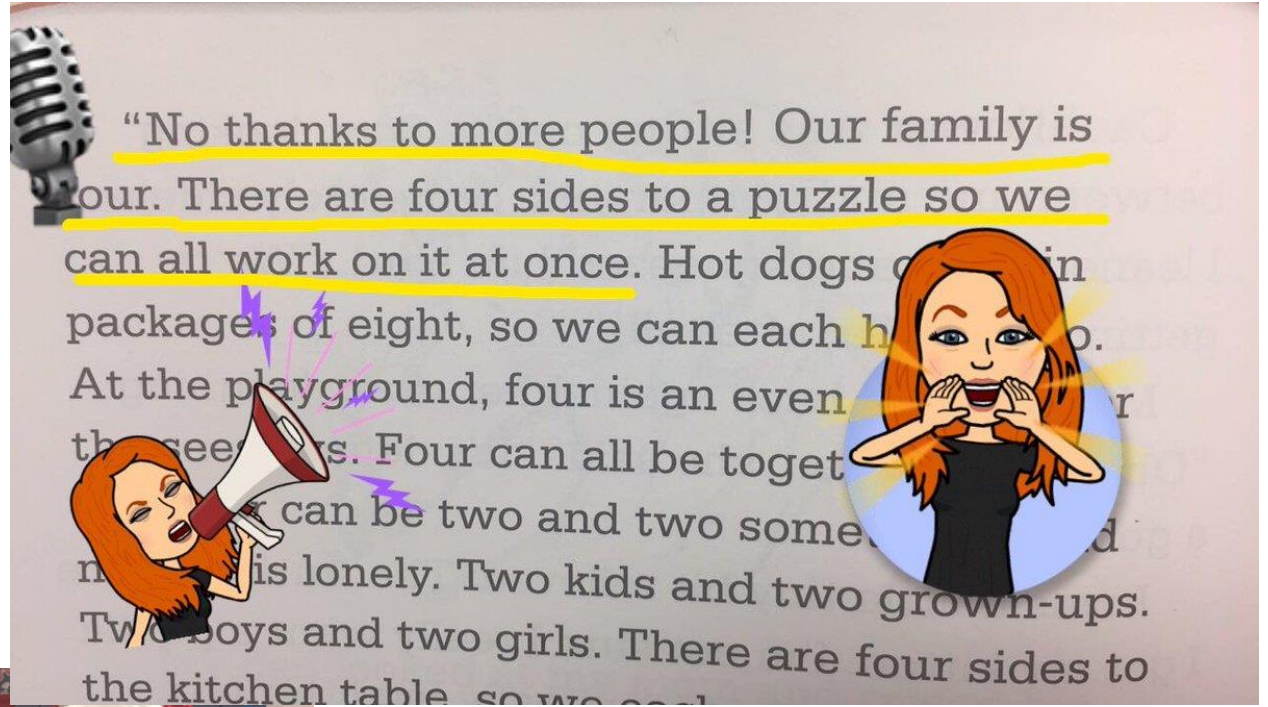
- What if we played with the string of our story arc the way we play with real string?
- What if we tied it together?
- Wove it?
- Created purposeful knots?
- Began with the resolution?
- Made a circle of our story







## #BookSnaps

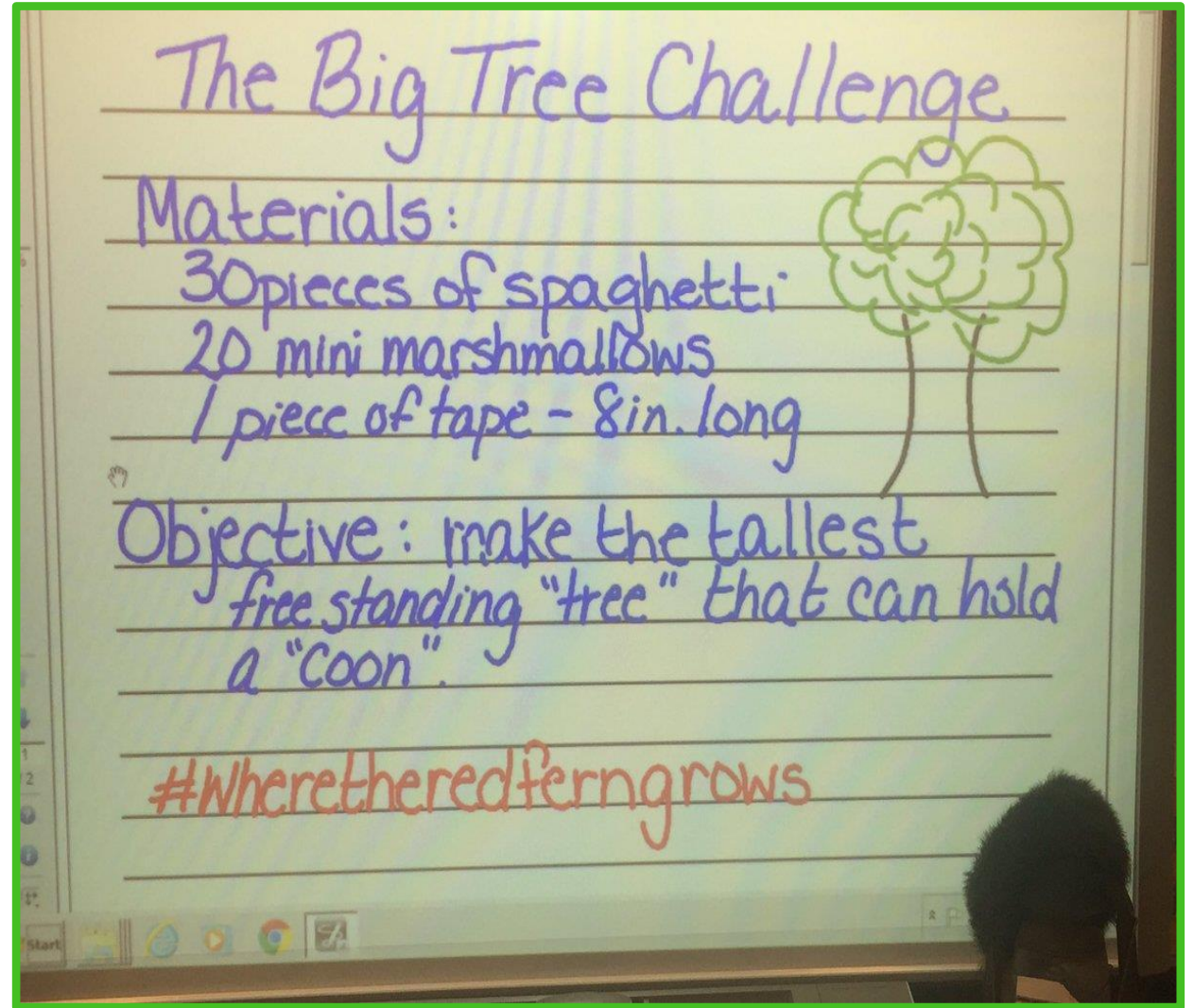
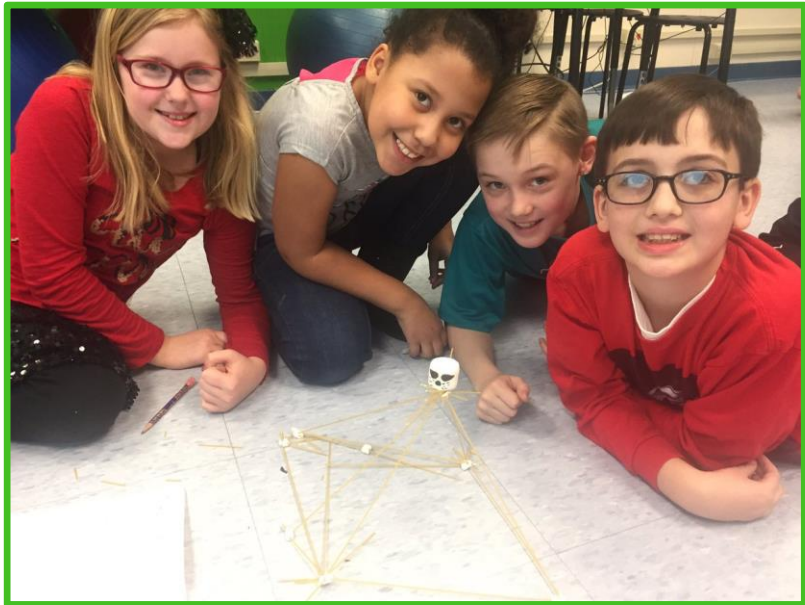
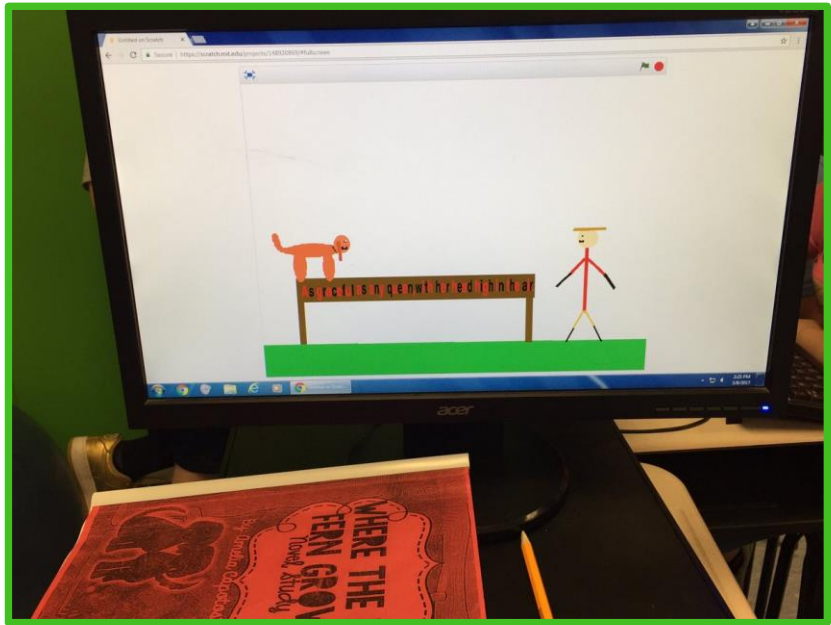


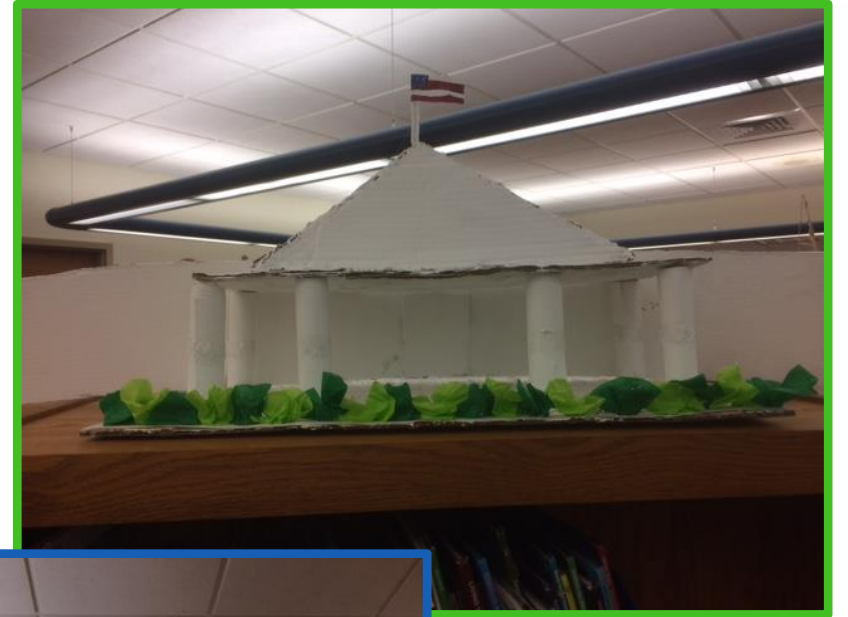
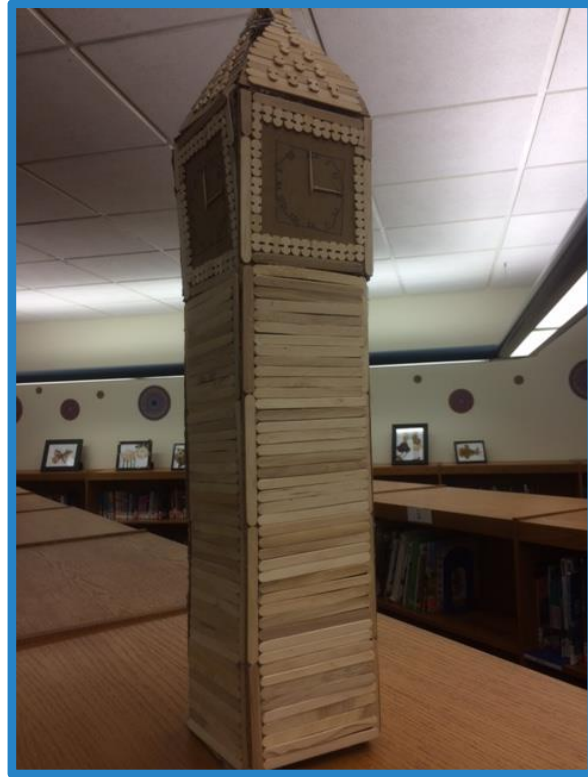
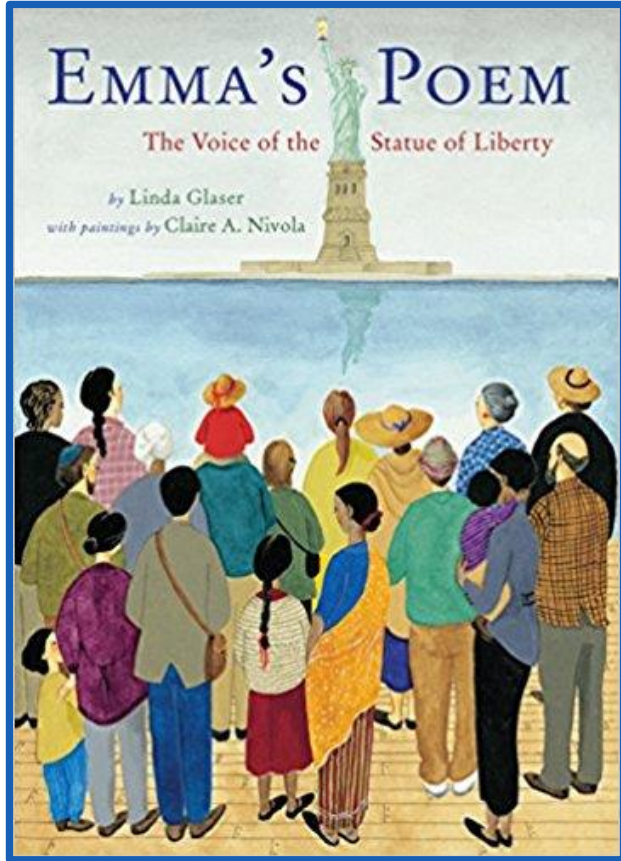
# Robotics



<https://twitter.com/twitter/statuses/922929528640561152>





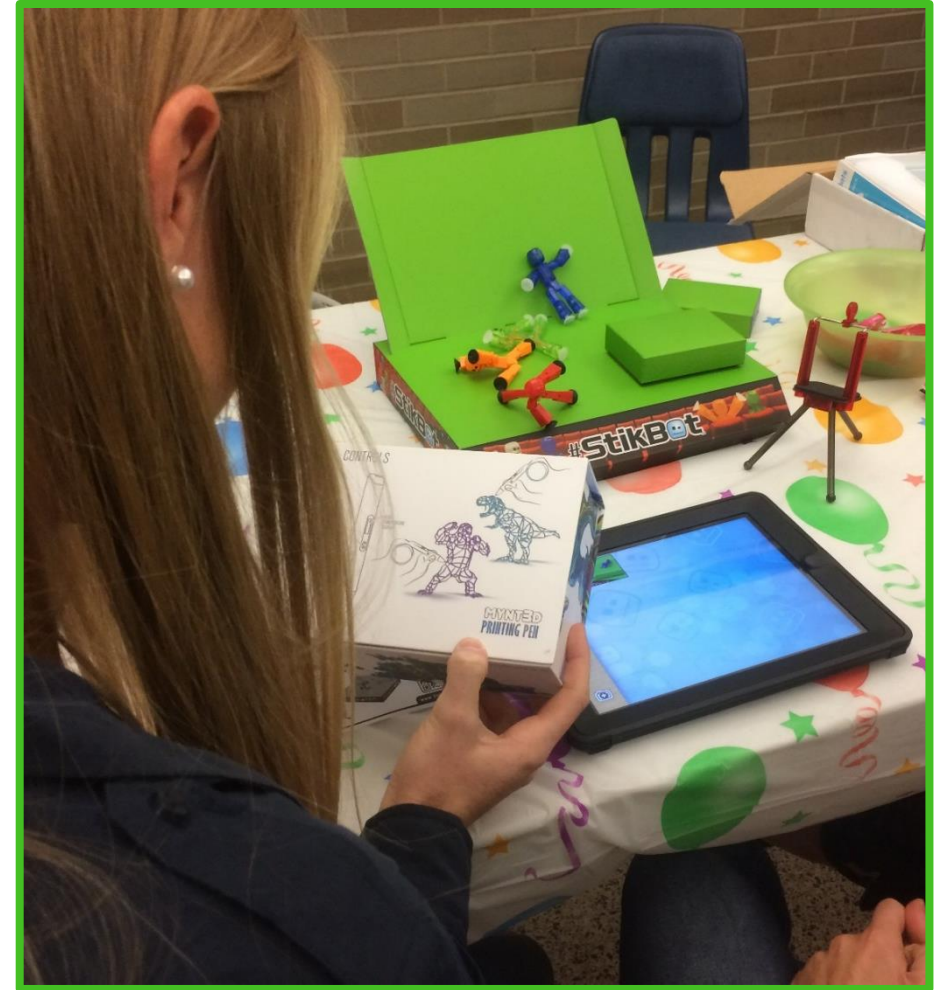






# Video Production and Animation

- Stikbot
- Green screens





# Vocabulary



# Writing





# Reading is the centerpiece of intellectual development in all disciplines.

American Society of Engineering Education, 2012



# Reflect

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



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