

NEW YORK HALL OF SCIENCE WWW.NYSCI.ORG

# Math and Making Delight and Identity

Peggy Monahan Creative Director of Exhibit Development

## So, who am I?



## So, who am I?



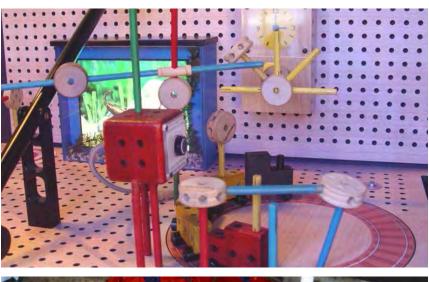
## So, who am I?



# Making/tinkering/designing exhibits and programs at many museums











## 3 math exhibitions and 4 math apps





# GEOMETRY Playground :







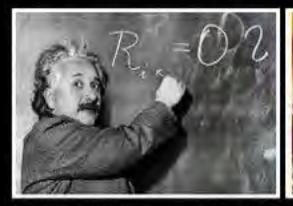


Image source: Exploratorium

155

# Want to compare Math and Making

# PHYSICIST



WHAT SOCIETY THINKS I DO







WHAT MY FRIENDS THINK I DO



WHAT THE GOVERNMENT THINKS I DO

WHAT I THINK I DO

WHAT I ACTUALLY DO

quickmeme.com

# Making



What society thinks



What we worry about



What we want

## Math



What society thinks

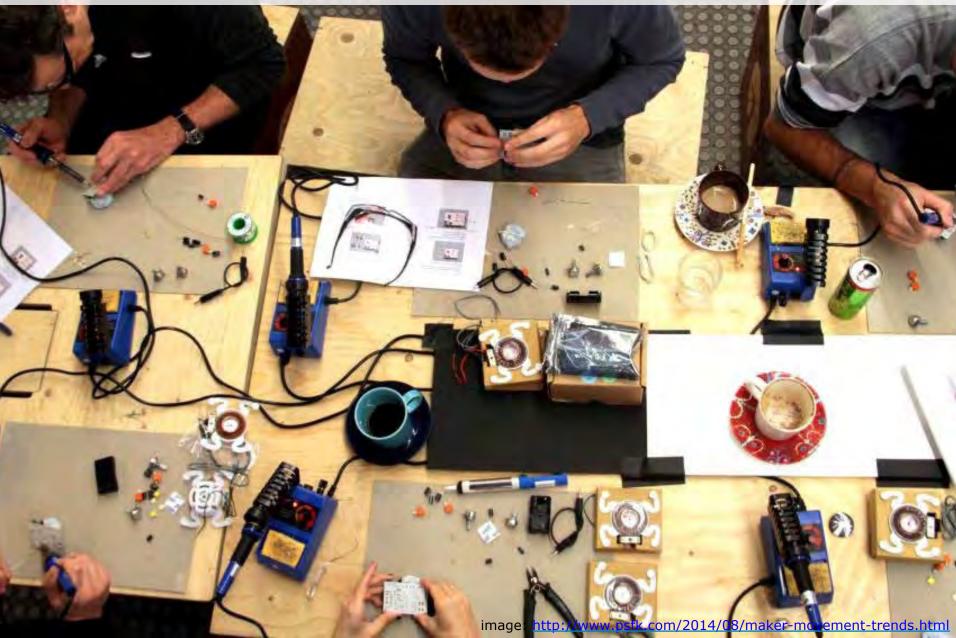


What we worry about



What we want

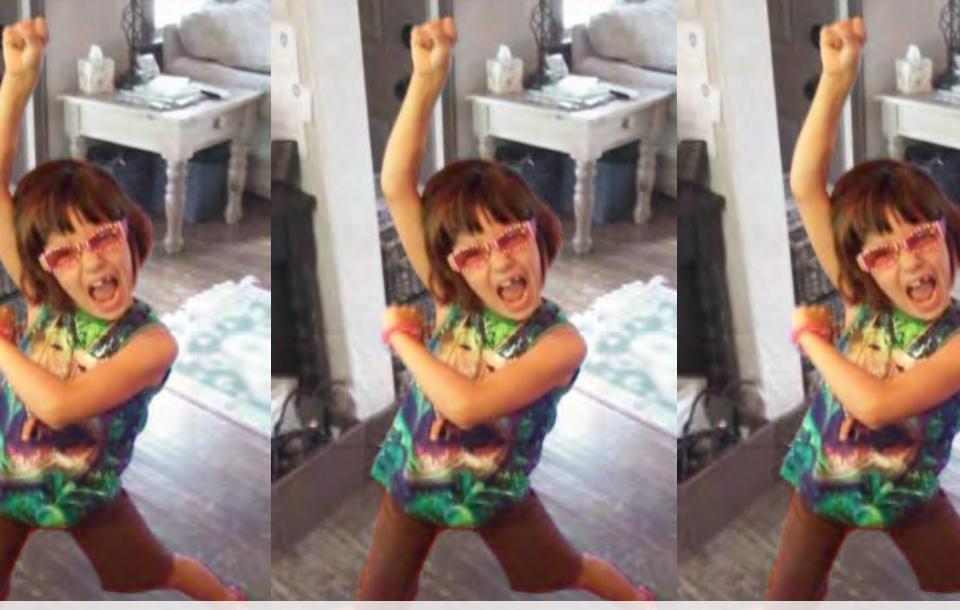
## What society thinks Making is





(this image was also on the 1st page of results)

## What we worry people think of Making

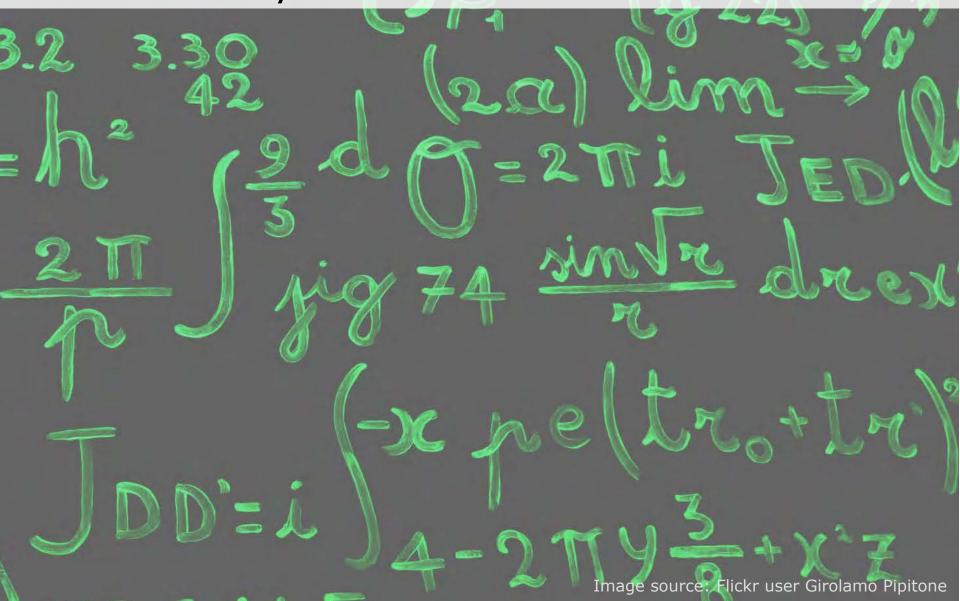


## What we want the effect of Making to be

image adapted from: h

a.c

## What society thinks math is

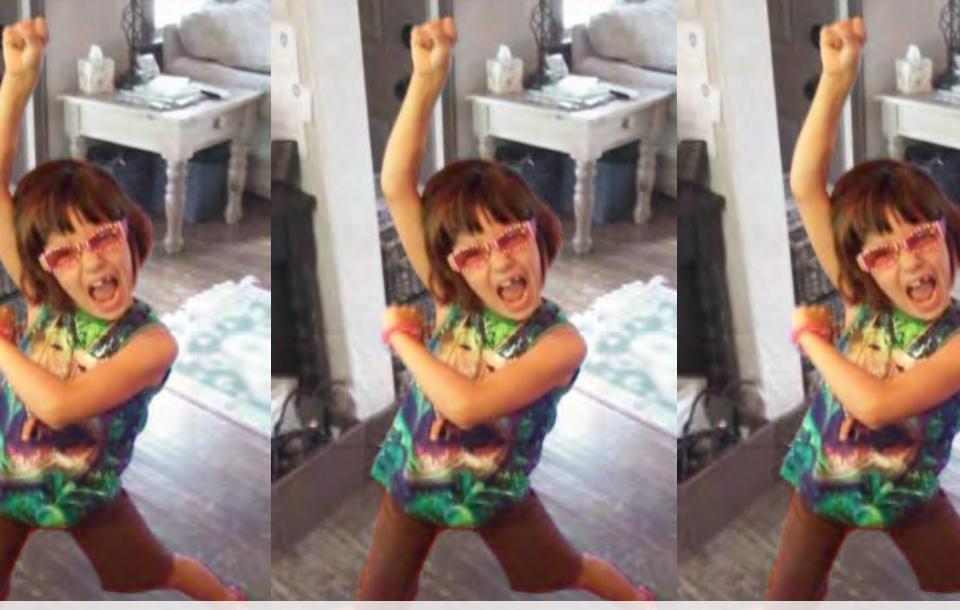


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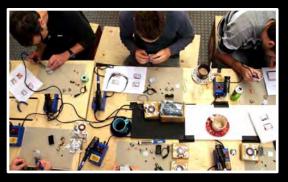
## What we worry people think of math

image source: https://commons.wikimedia.org/wiki/File:Sleeping\_students.jpc



## What we want the effect of math to be

image adapted from: h



What society thinks

# Making



What we worry about



What we want

## Math

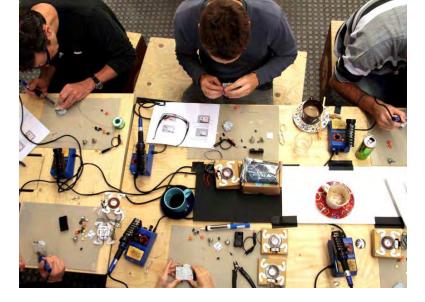
What society thinks



What we worry about



What we want



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Math

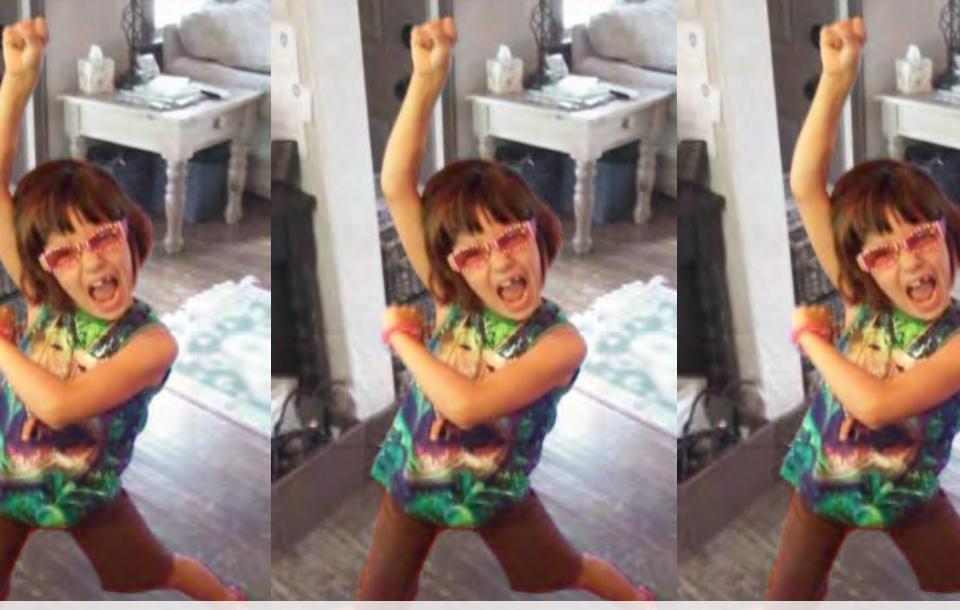
# Making Why the mismatch?



## We recognize this as a picture of Making...

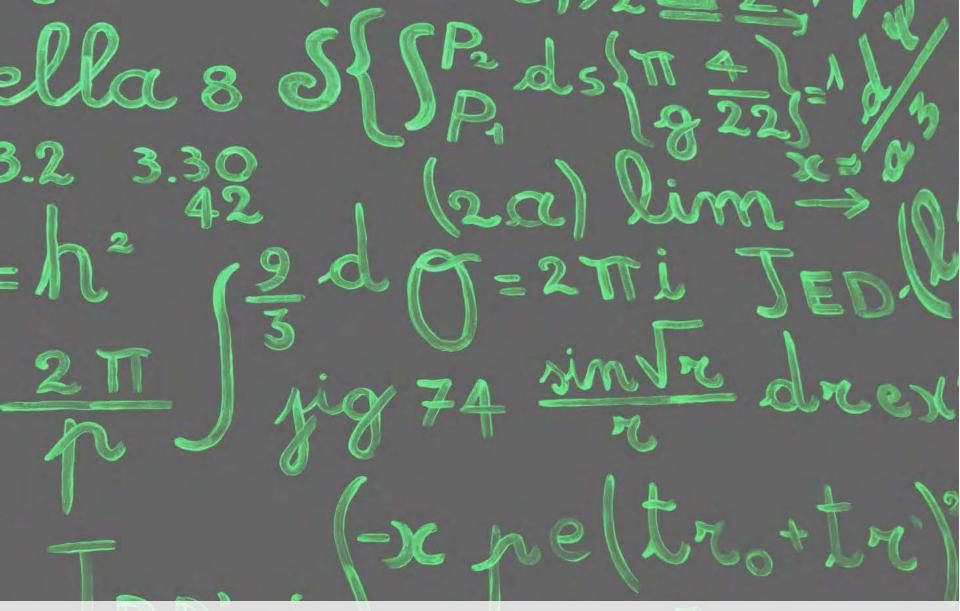


image source: https://www.flickr.com/photos/nysci/9866731863

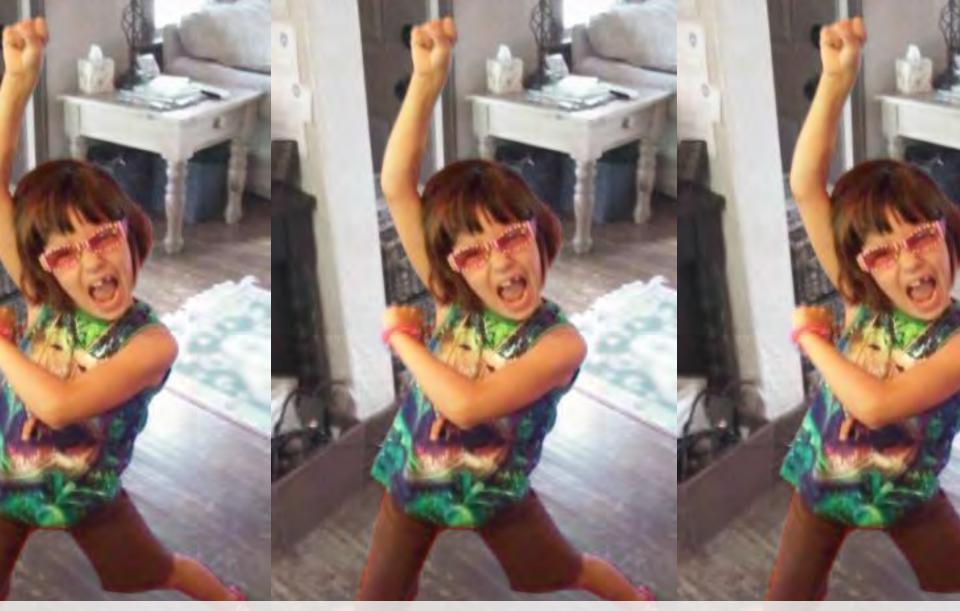


## ...and that's not far from this kind of awesome

image adapted from:



#### But if THIS is what we think math is...



## ... it doesn't really mesh with this. At all.

image adapted from:

a.c



...ZZZZ



#### easy to see the SCIENCE in Making - why not math?

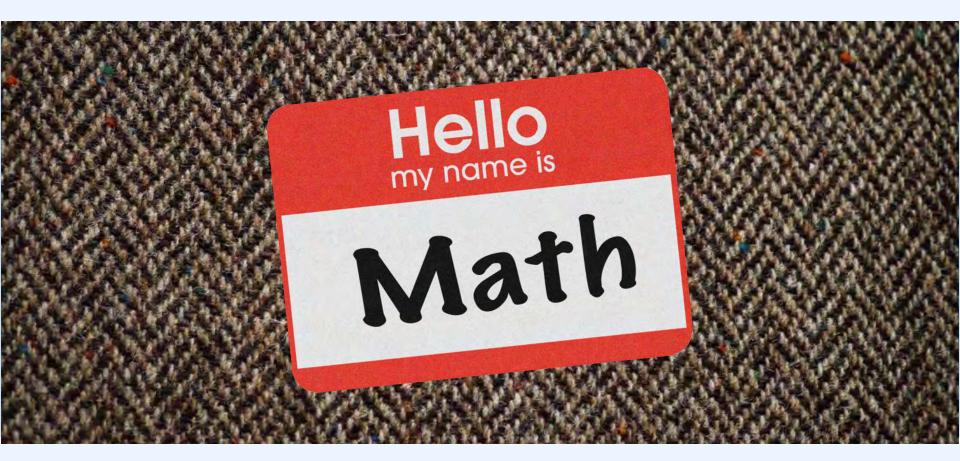


# Hello my name is

Math

image source: Peggy Monahan

## How I got to know Math



# 100 Barris

## Mom

image source: Peggy Monahan

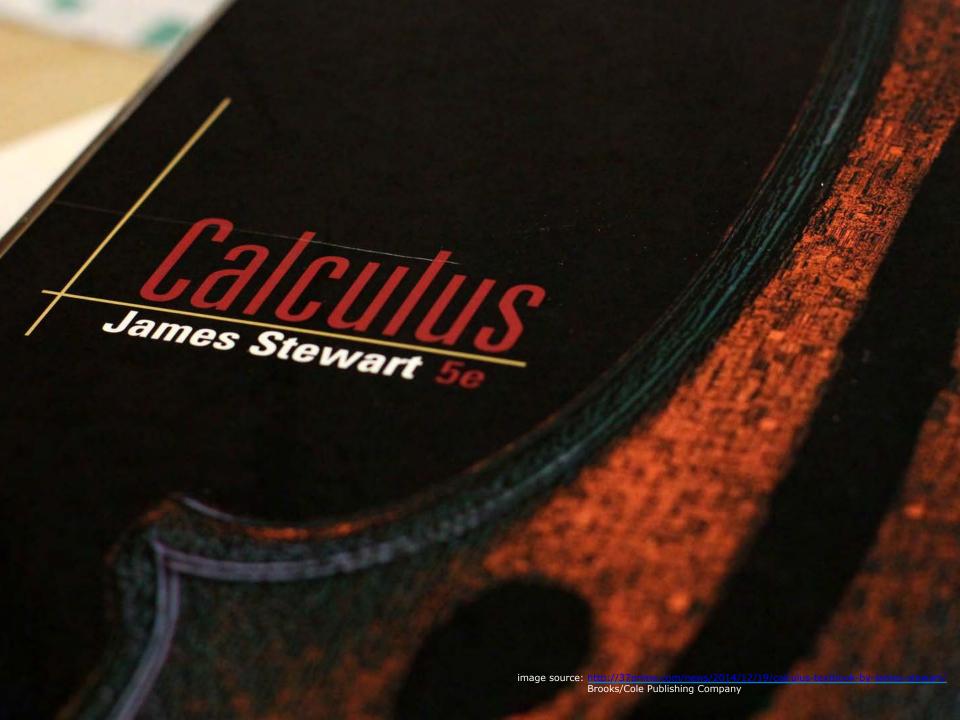


## Mom



## Change the shape, change the volume

image by Flickr user 77krc





# Physics Serway • Faughin

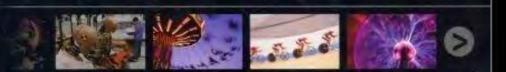


image source: Houghton Mifflin Harcourt

# James Stewart 50

image source: Brooks/Cole Publishing Company

## patterns, relationships, interactions





## Helped me see connections

Image source: NASA





# wanted things to MAKE SENSE to visitors



### I could look for patterns and figure things out

image source: http://bcmstories.com/archive-main-page/chapter 05-archive/



# brought that into tinkering/making experiences



### put opportunities to build and create in exhibits





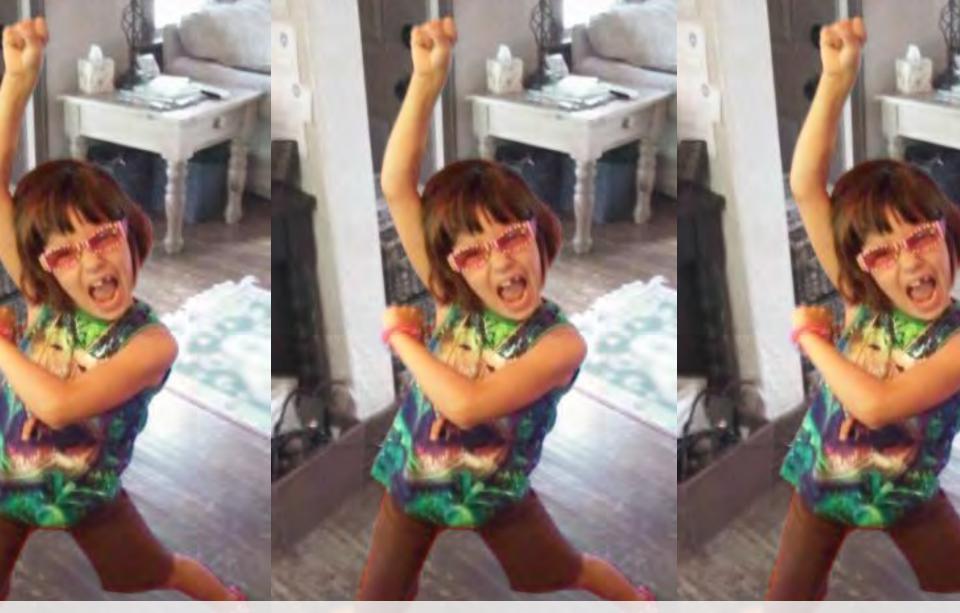
# some exhibits were explicitly math-y



### here at NYSCI, kids are always making

image source: https://www.etsy.com/shop/ThisGirlsTees

SGAL

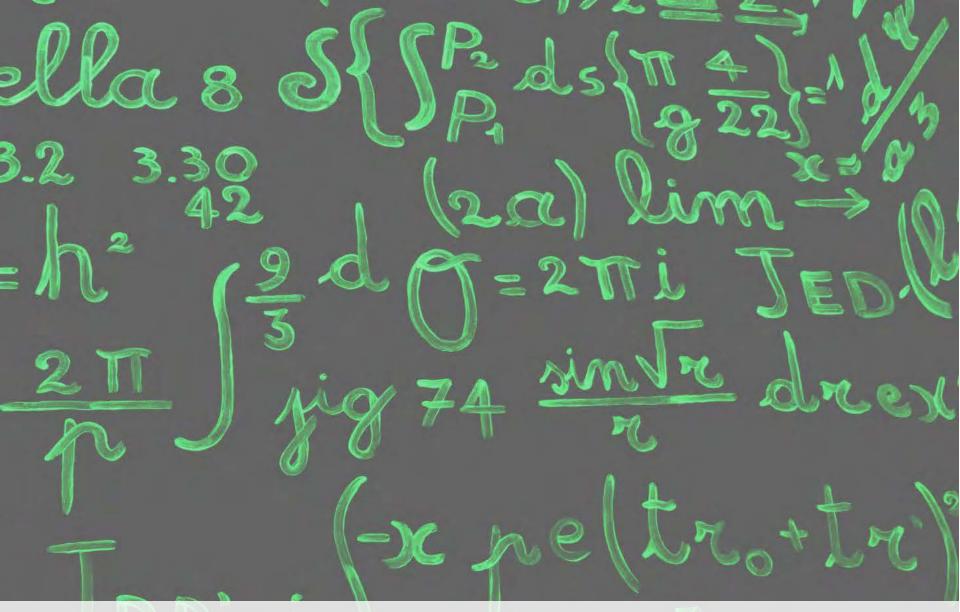


# I think we're here with making

image adapted from: ht

# but we're not here with math yet

THISCIRI



### I think we need to hint at this



### don't want to provoke an immune response

image source: https://www.youtube.com/channel/UC8m1Zp7XytrjjSDxCZeRKjQ/video



# how do we get here?



### make sure the math works for everyone



# activities that play with proportion



### some exhibits were explicitly math-y

B

No

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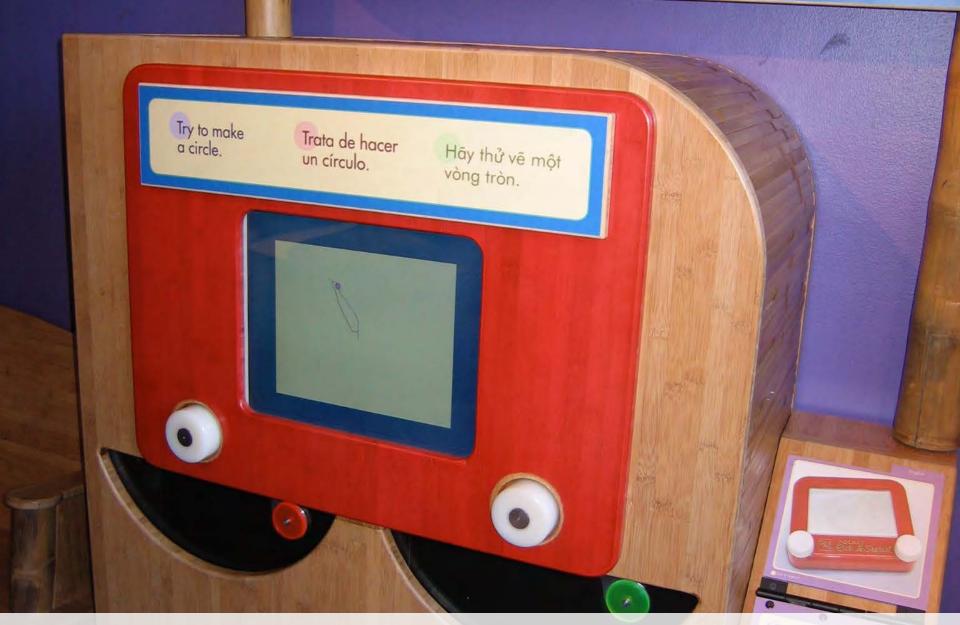
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Riff

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### Yes, you CAN use math words

# find ways to make math explicit

# find ways to make math explicit

# Dowel Sculptures

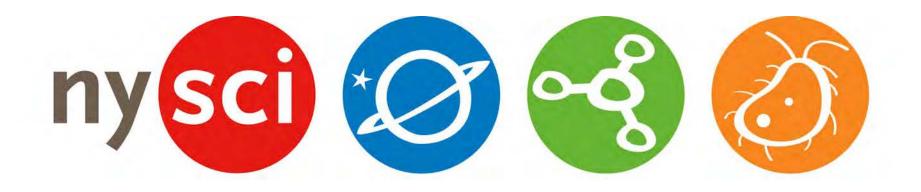
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#guidance
#encouragement
#empowerment
#welovenysci
#engineers :)

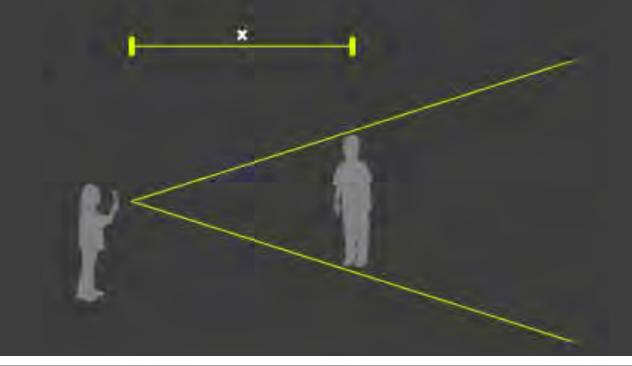
image from Instagram user @hamptonshairgirl

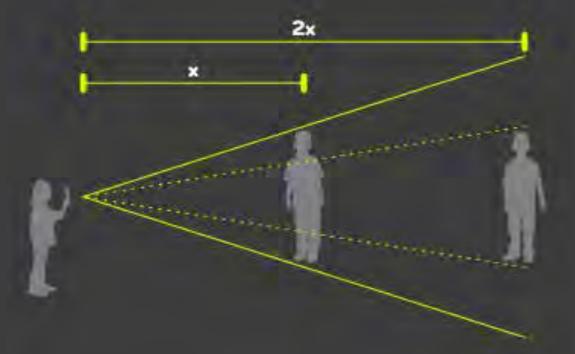


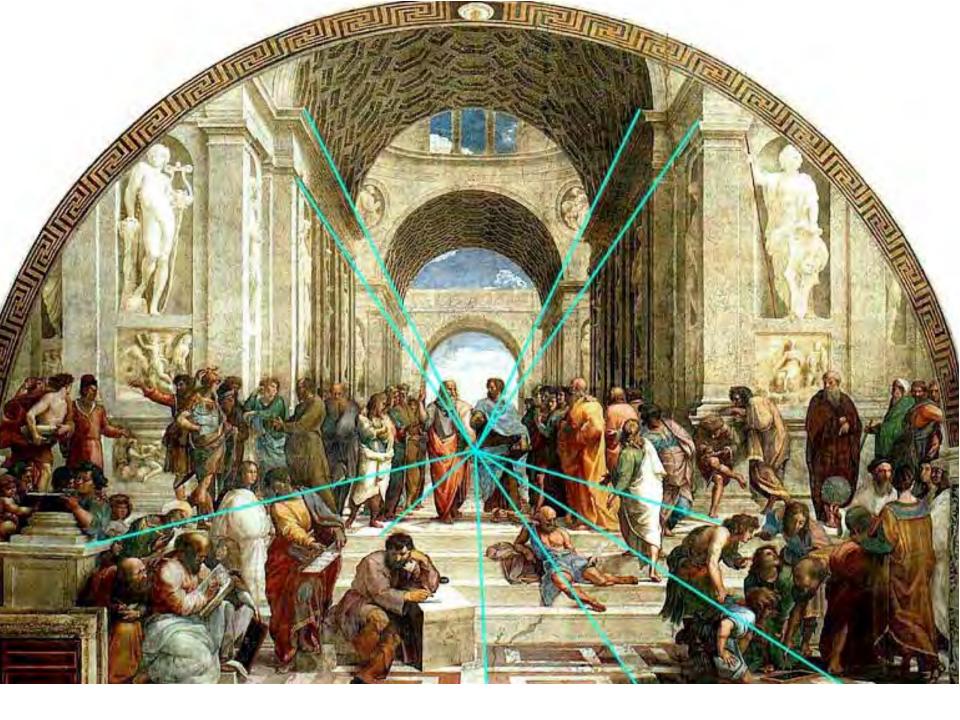


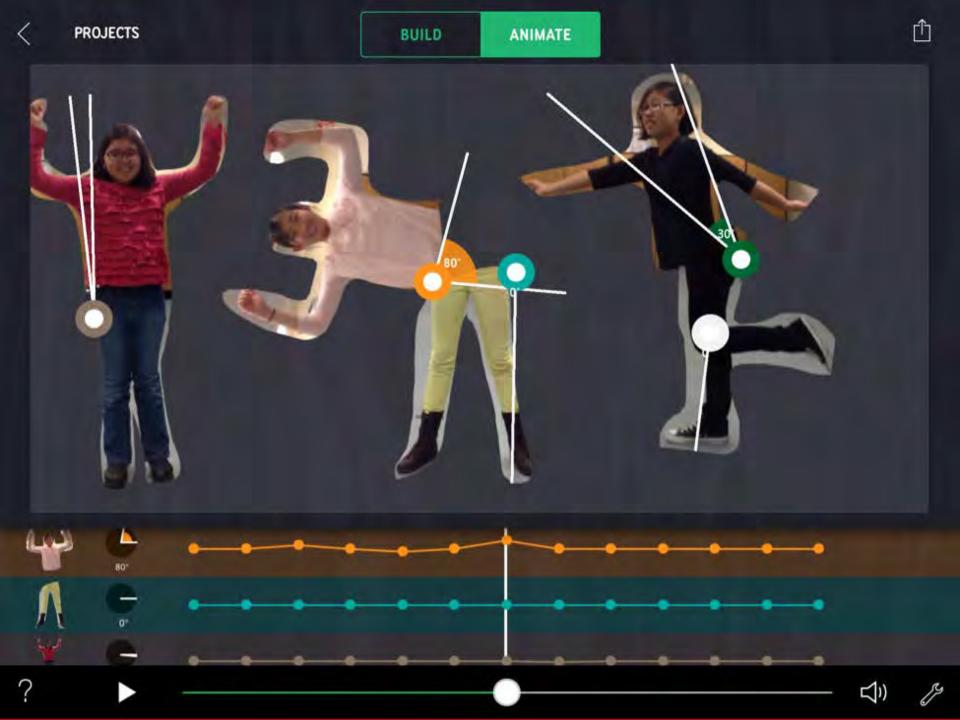


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### Exhibits I've done





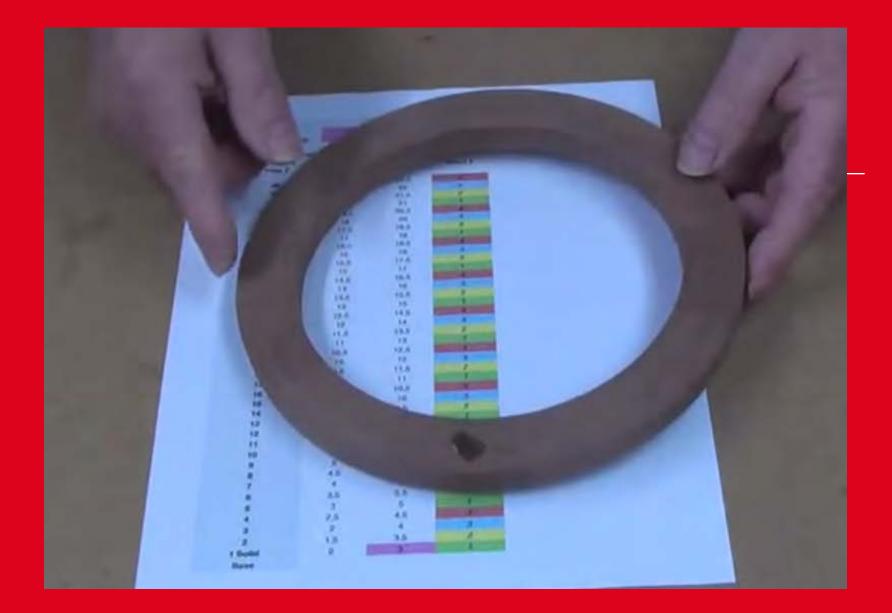




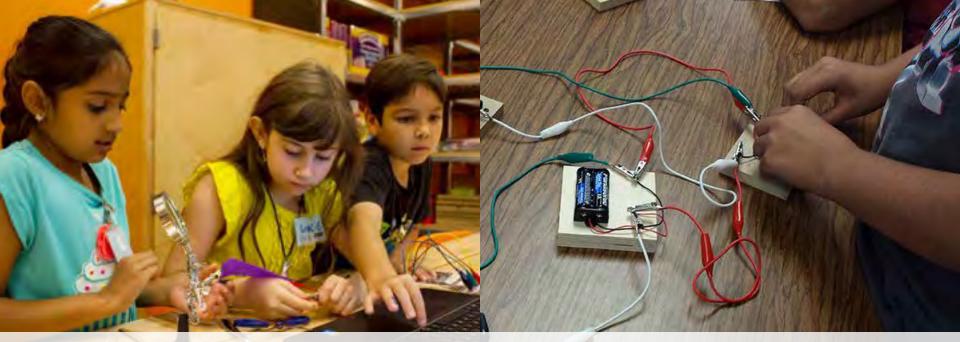
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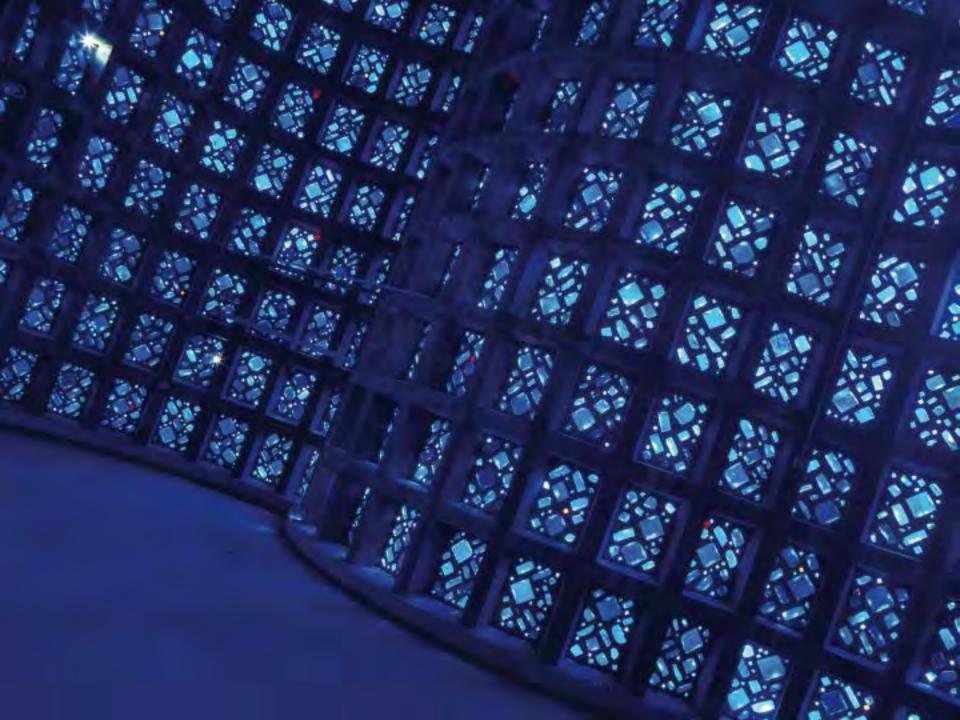




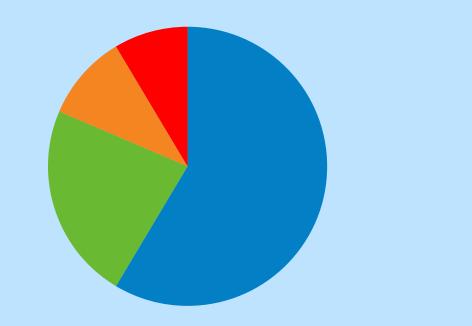
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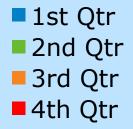


#### easy to see the SCIENCE in Making - why not math?



## **Title and Content Layout**

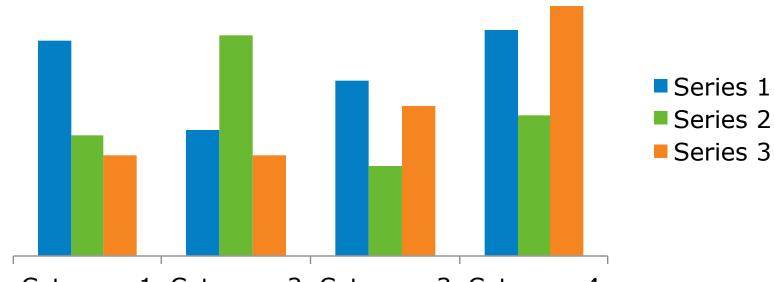




## Section Divider or Picture and Caption



#### Title and Chart Layout



Category 1 Category 2 Category 3 Category 4

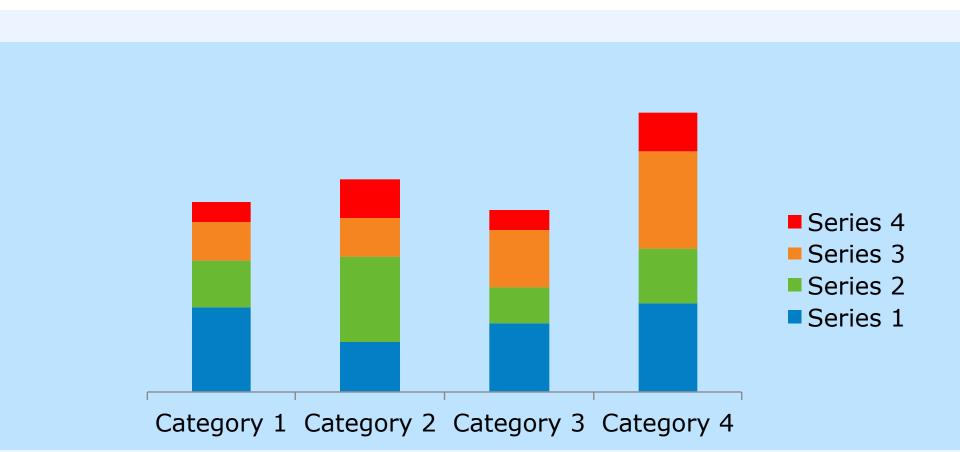
# Two Content Layout



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## **One Line Here**

Content with Caption Layout This is area is for footnotes. Three lines here are ideal.





New York Hall of Science

