

Adding STEM to Any Classroom

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Chris Woods

19 years teaching HS math

1 wife, 3 kids, 250 inches of snow

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Every Teacher is a STEM Teacher..
including you!

STEM is for...

Every student.

Every class.

Every day.

“Time for a POP QUIZ”

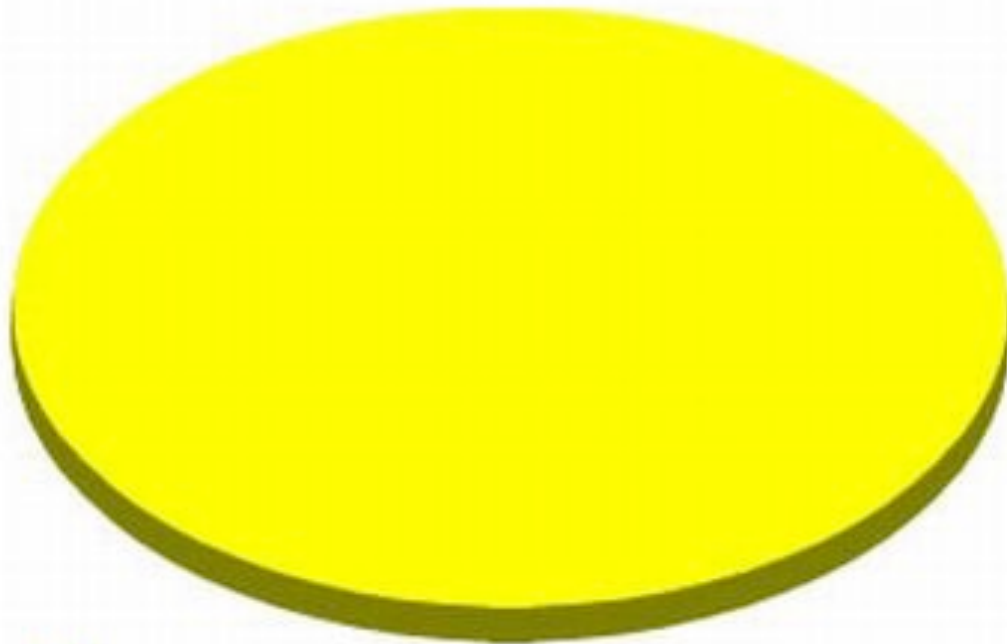
“Time for STANDARDIZED TESTING”


“Time for STEM”

“Time for a DIET”

Time for a song...STEM-ified

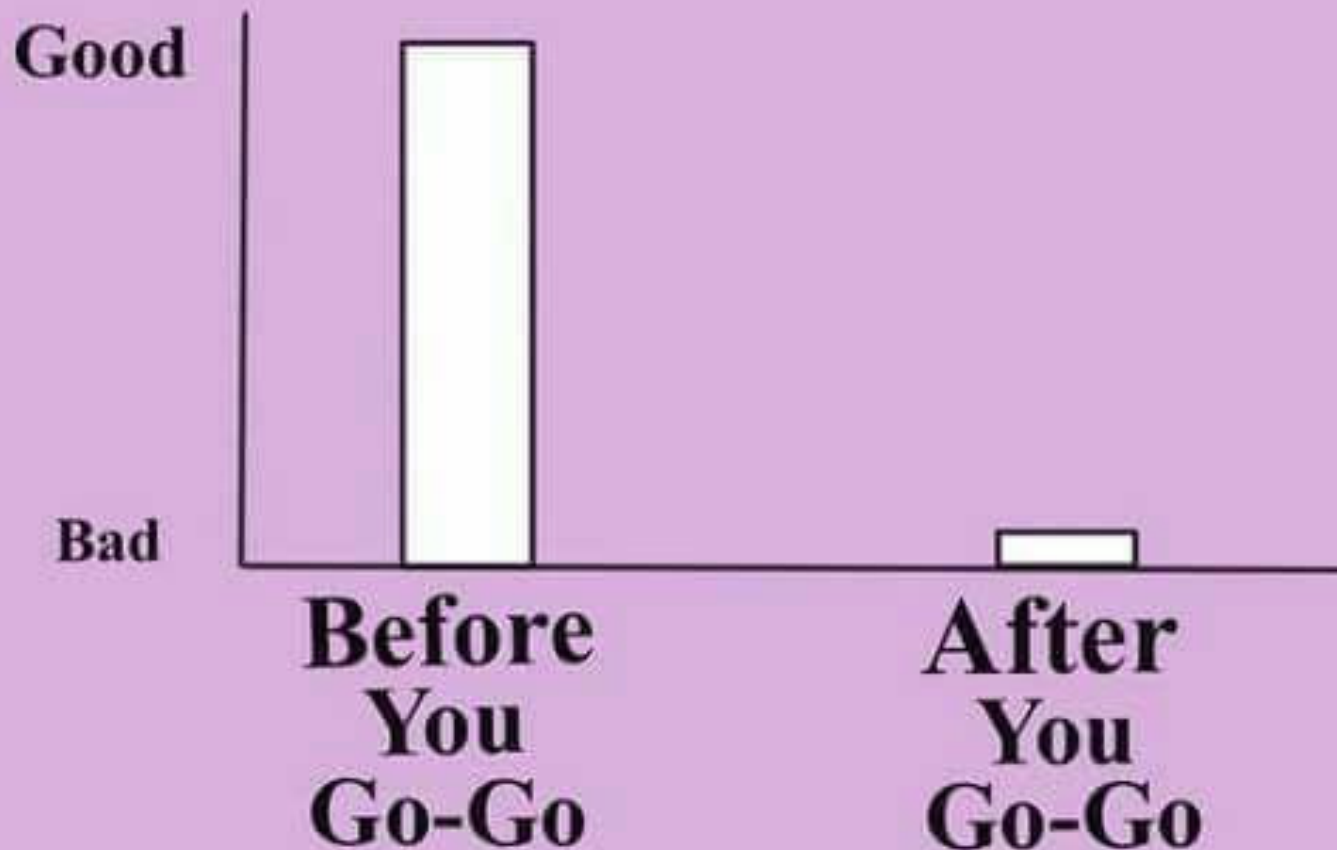
Popular colors of residential submarines



 Yellow

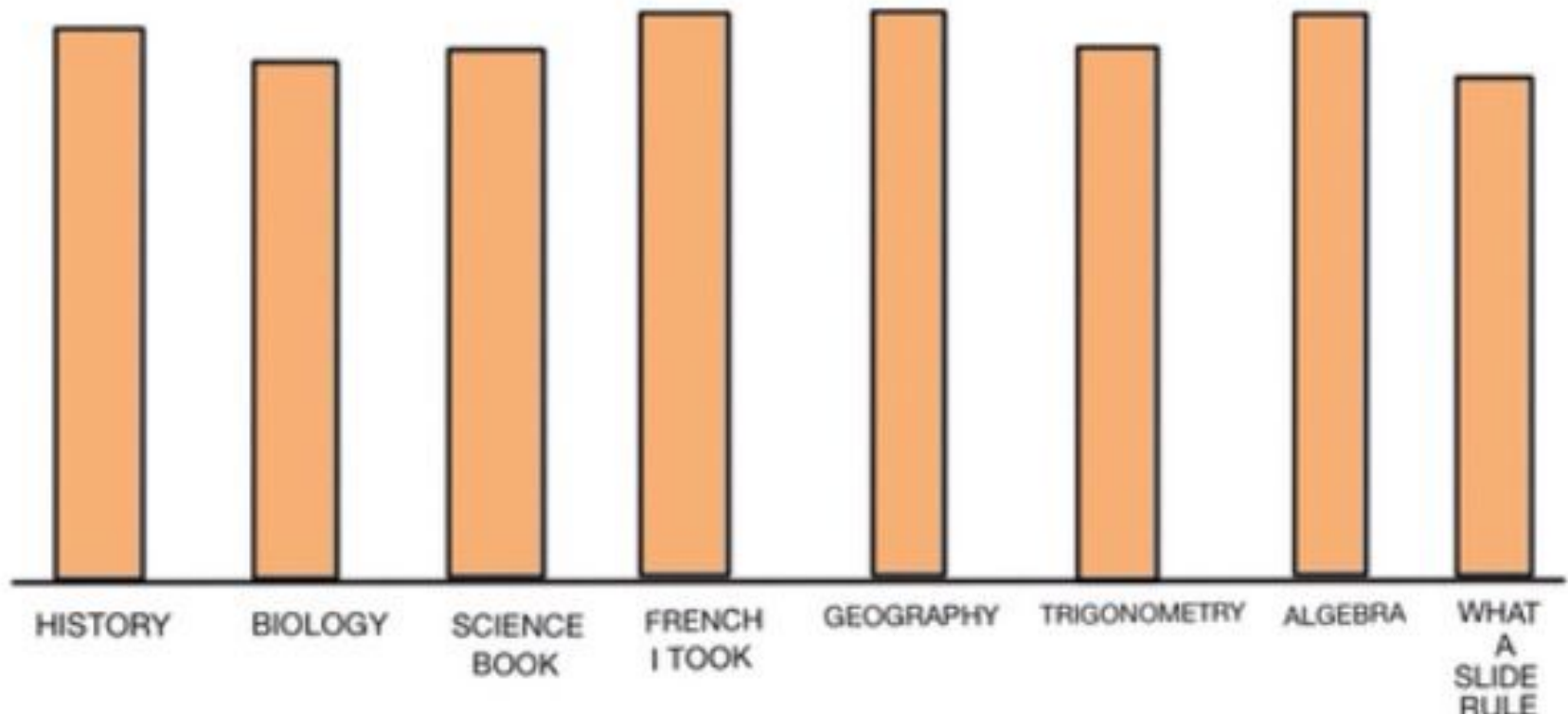
 GraphJam.com

BEST TIME TO WAKE ME UP



Source: Wham!

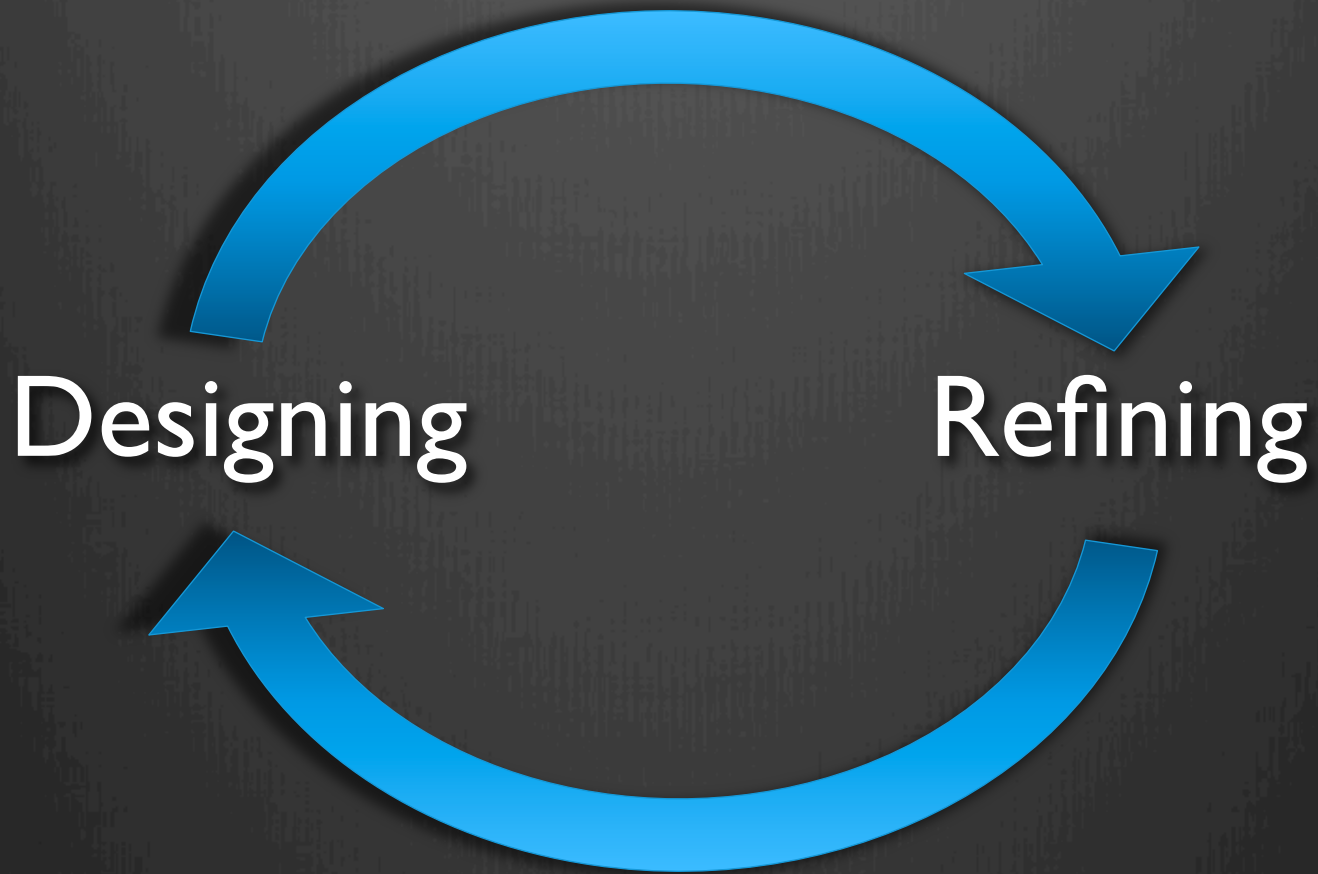
Subjects I Don't Know Much About



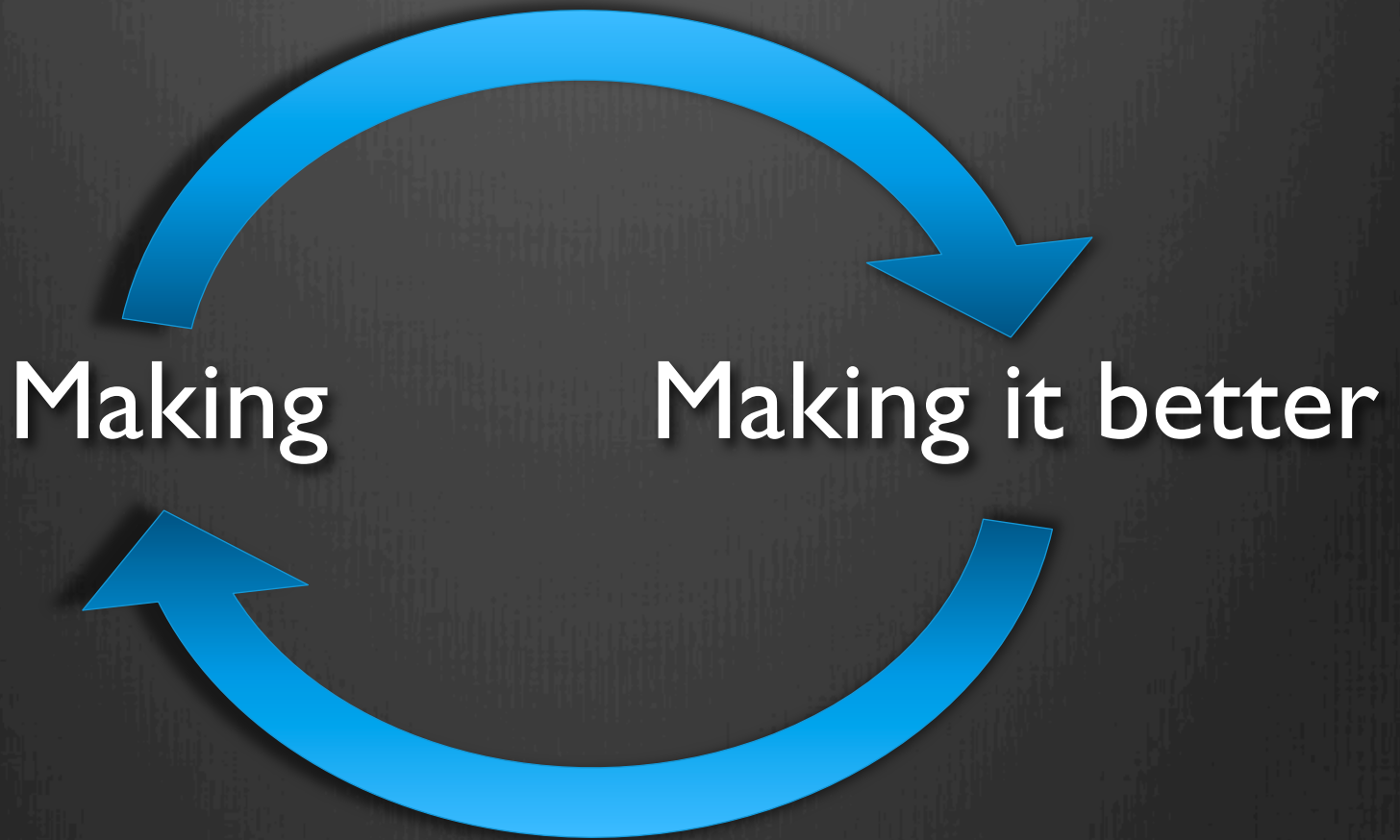
Which STEAM subject is your
favorite, and why?

Which STEAM subject is your
least favorite, and why?

What is Engineering?



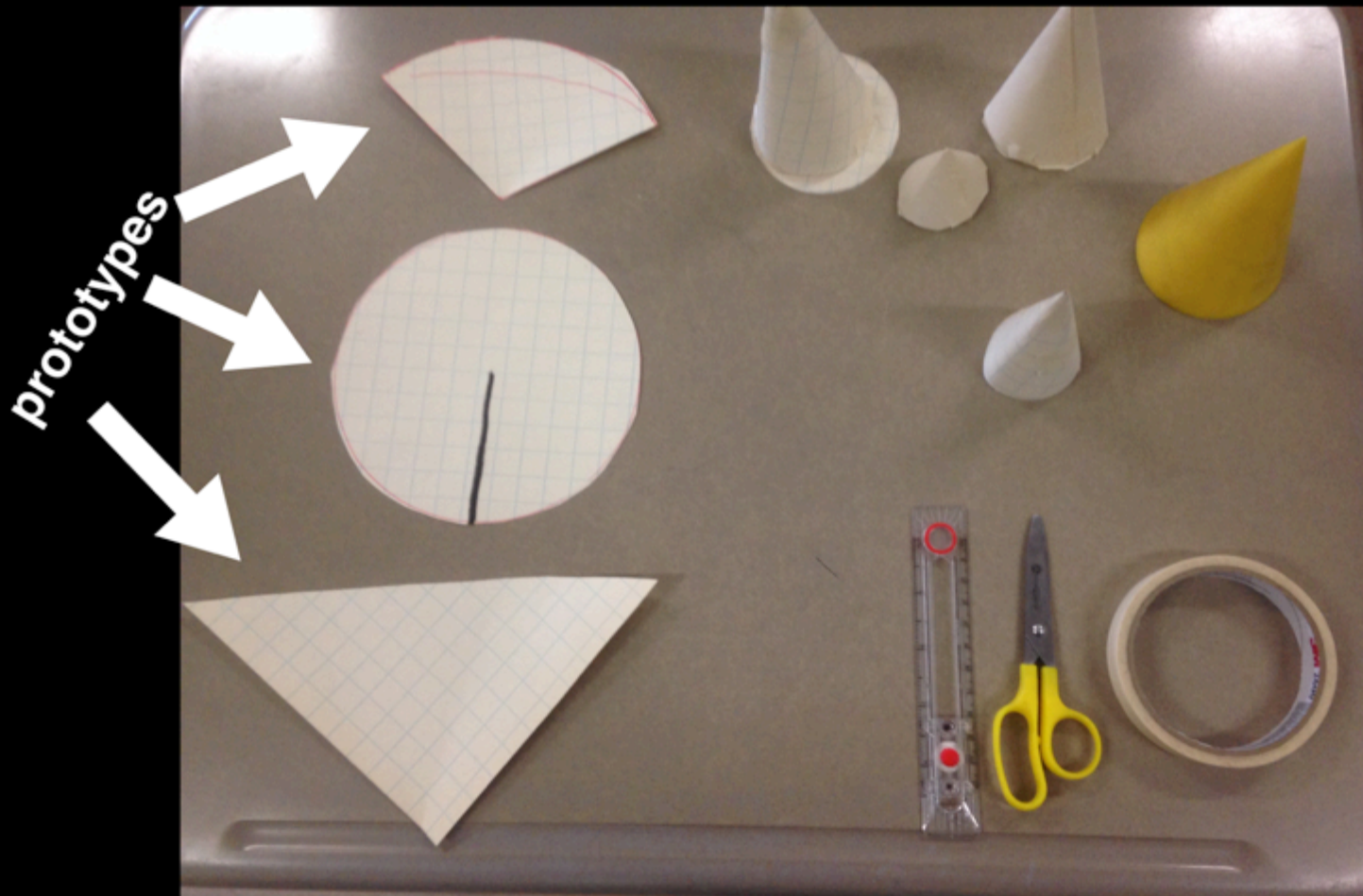
What is Engineering?



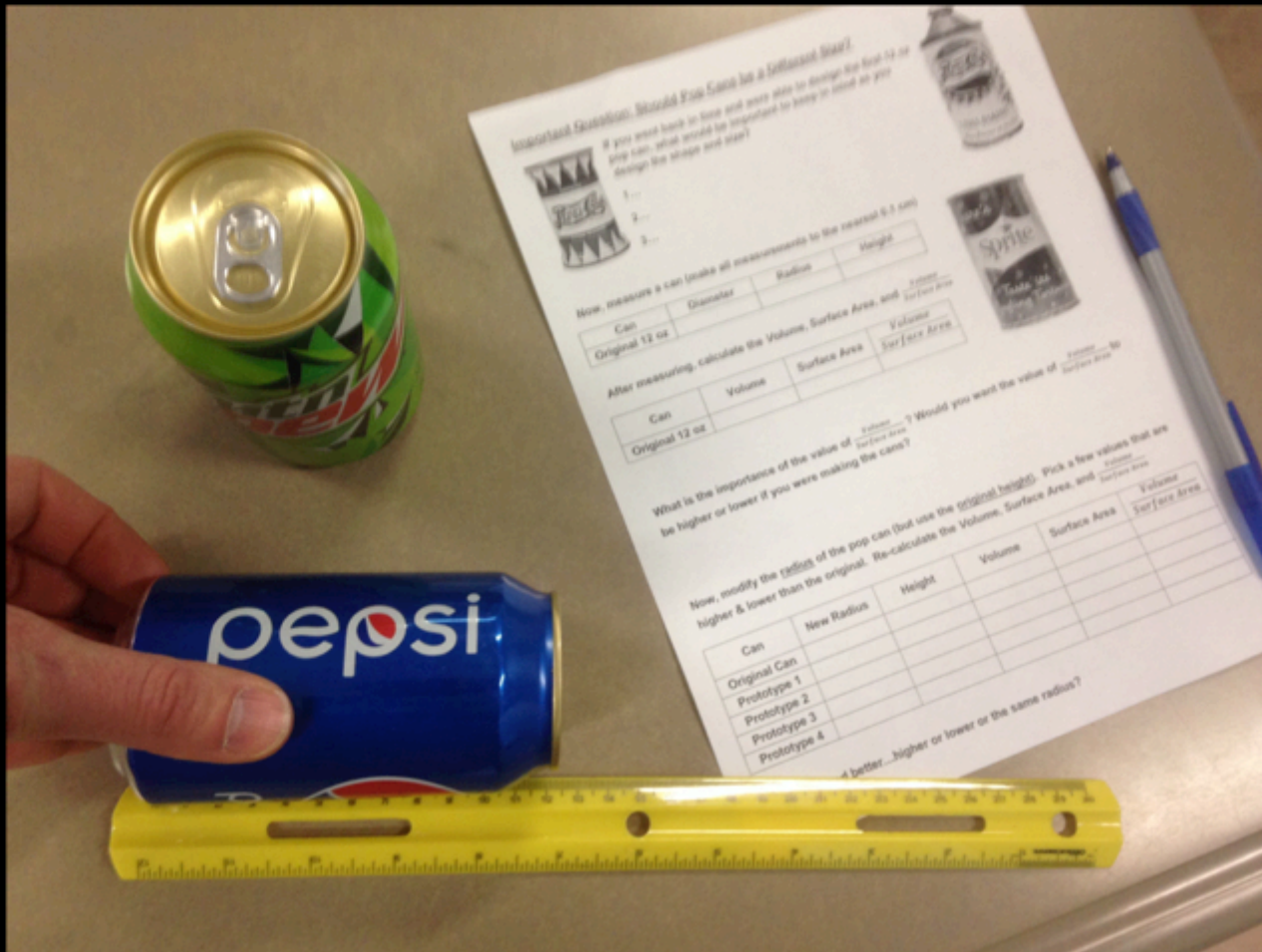
Problem Solving



today's big problem: how to make a cone



today's big problem: what's the best size for a pop can





currently,
3,000,000
bottles of coke are sold per day

with the new design,
857,142
of the bottles can be shipped daily with a 0 carbon footprint

and
321,856,830
bottles are shipped annually with a 0 carbon footprint

a smaller footprint

The new bottle features a smaller footprint by design, making the transportation of the bottles much more efficient. For every 4 bottles, space for nearly 2 additional bottles is recovered.



3949 bottles

With the more efficient design, an addition of 3949 bottles can be shipped per shipping container.

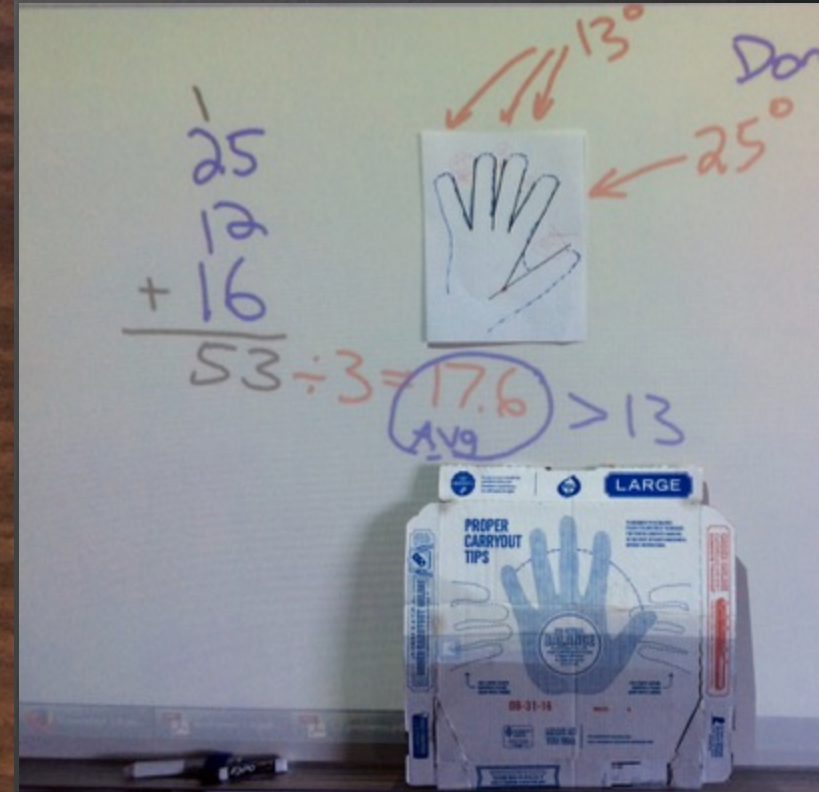


shipping
benefits



“smaller footprint = smaller carbon footprint”

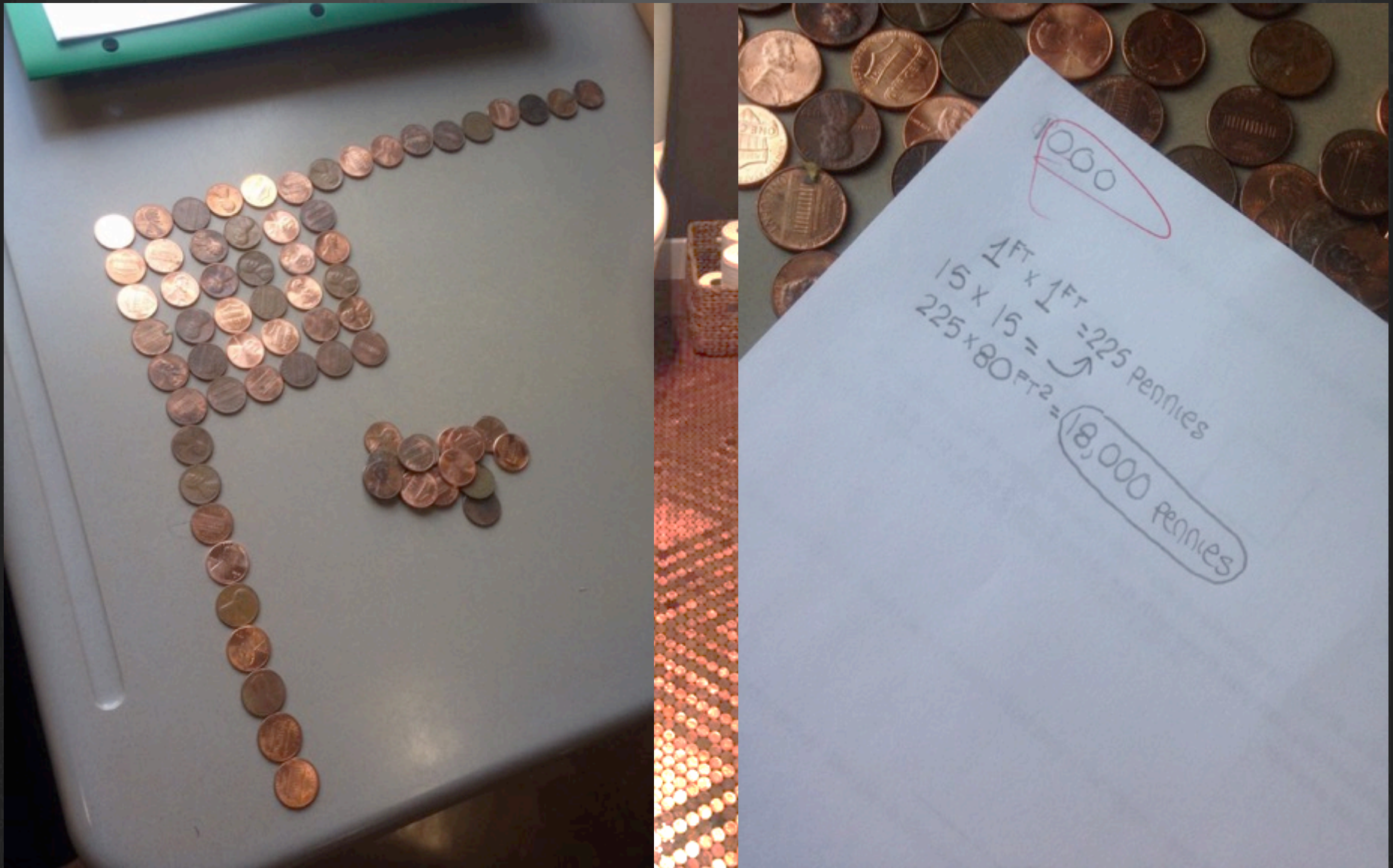




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“Do circles tile?”



Why do kids like STEM so much?

Superheroes = STEM

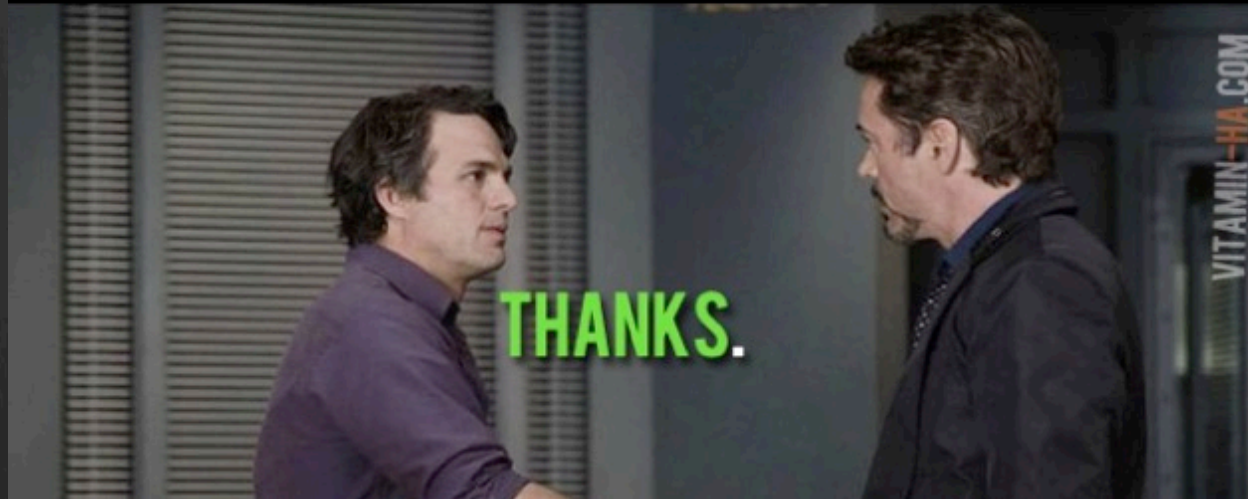
**Iron Man.
That's kind of
catchy. It's got
a nice ring to
it. I mean it's
not technically
accurate. The
suit's a gold
titanium alloy,
but it's kind of
provocative,
the imagery
anyway.**



Teacher: What do you want to be
when you grow up?

Student: Tony Stark







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#TshirtTuesday

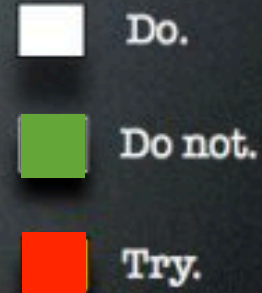
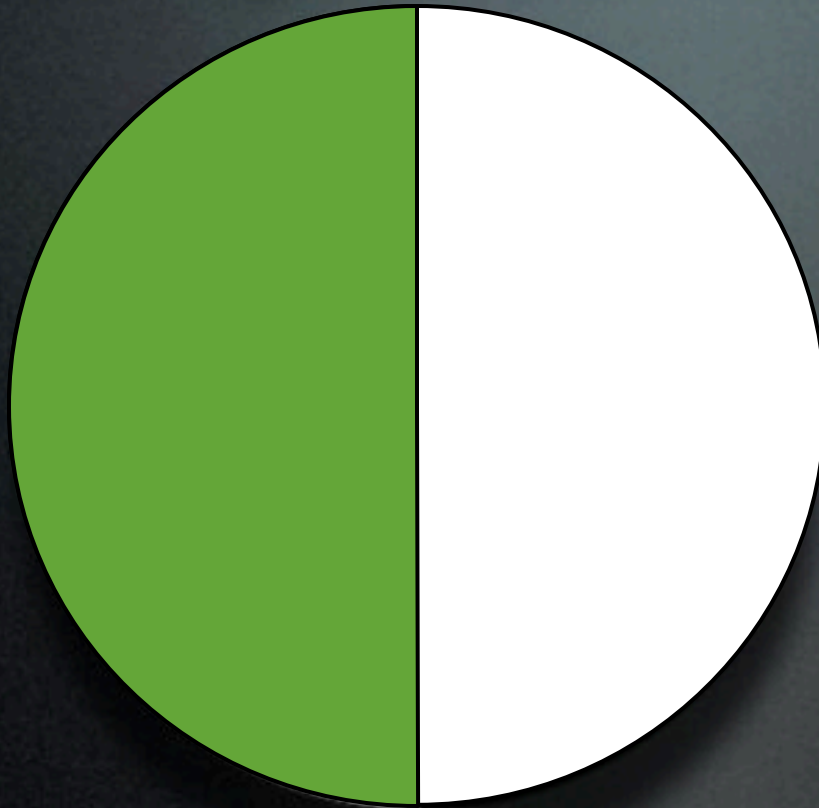


#TshirtTuesday



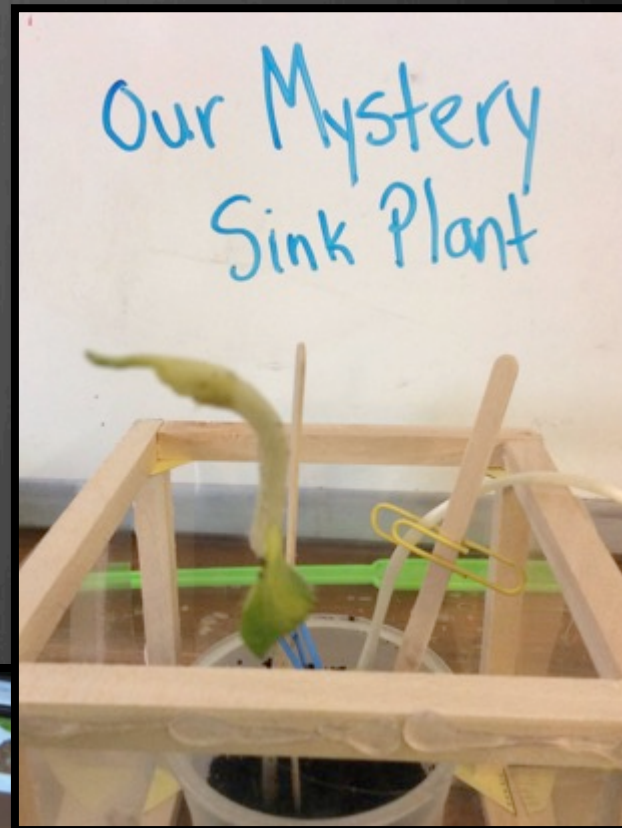
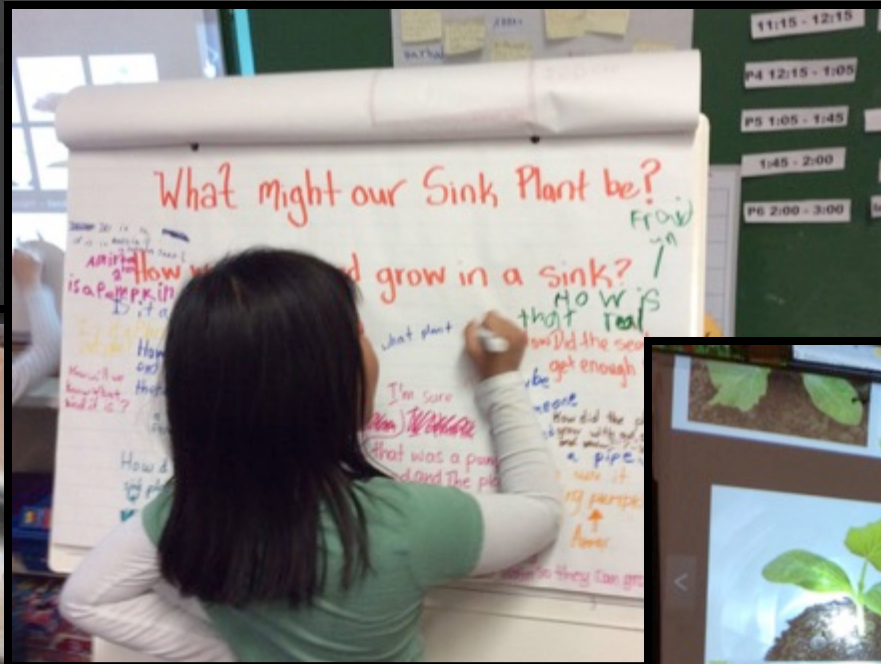
What do you think is the
future of STEM education?

Your options according to Yoda.



Source: GraphJam.com

Do...and try. -STEM



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Look for STEM everywhere



#STEMeverywhere



#STEMeverywhere



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#STEMeverywhere

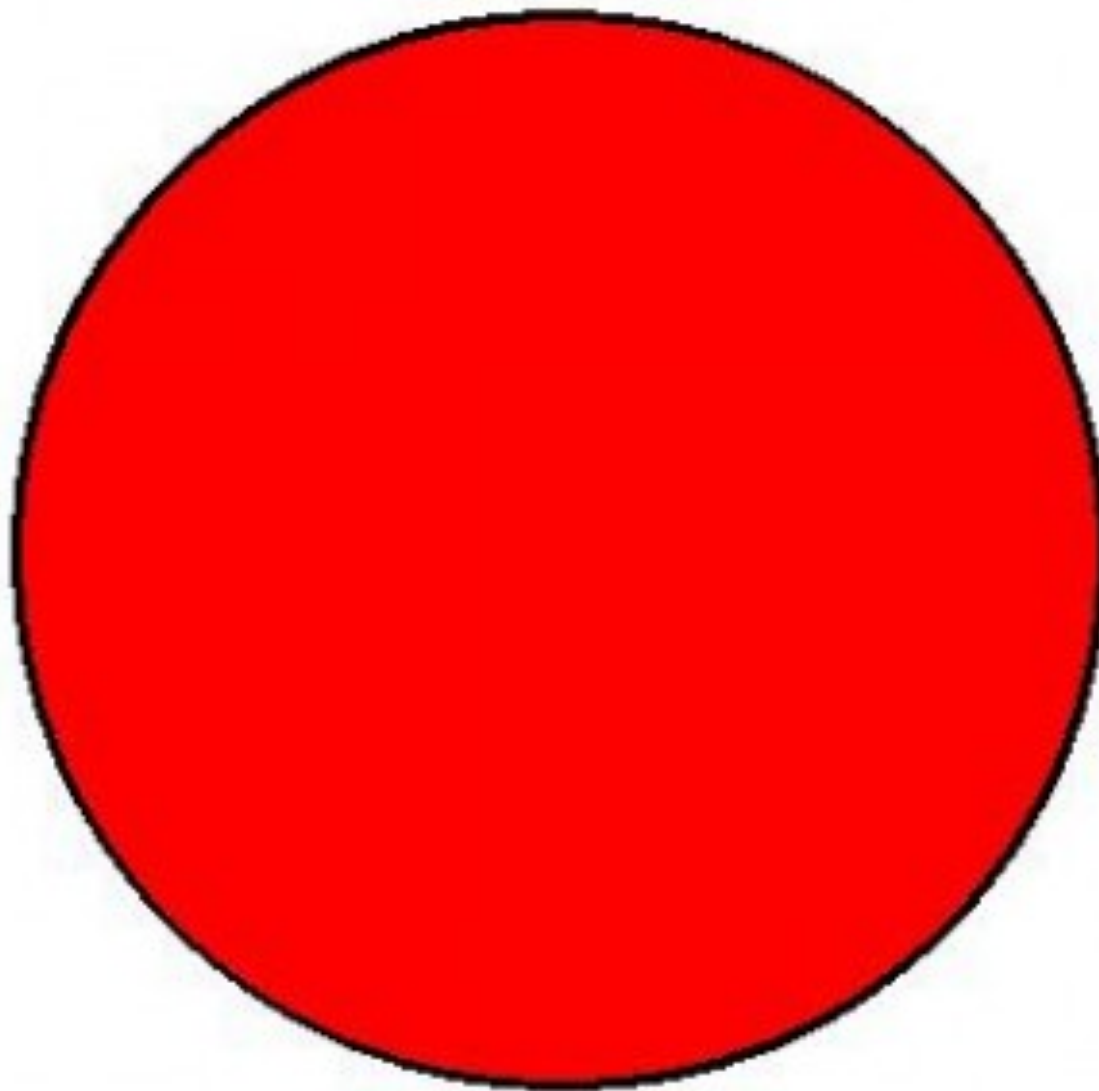


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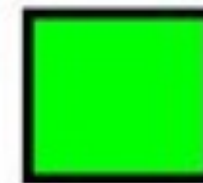
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Send your kids on a STEM Scavenger Hunt

Things Meat Loaf would do for love

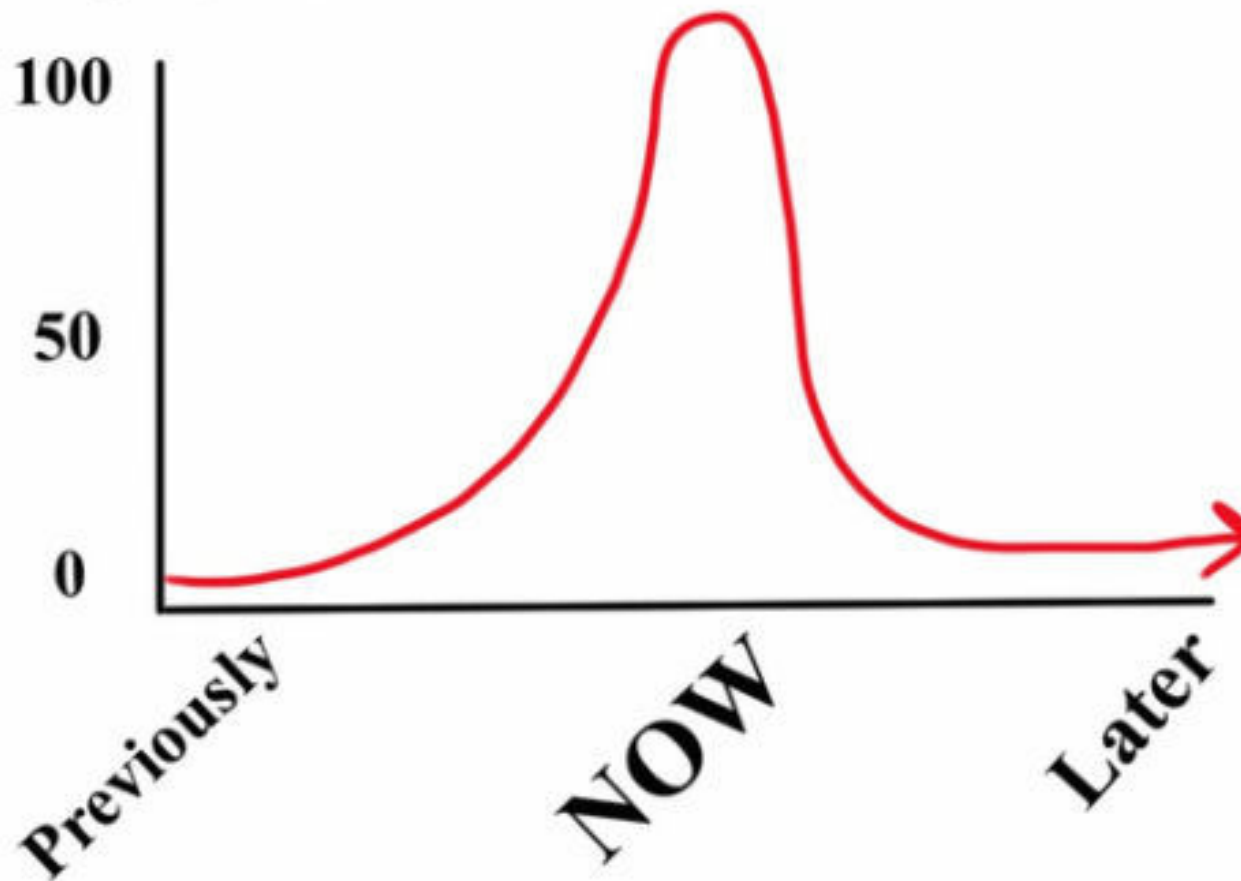


Anything

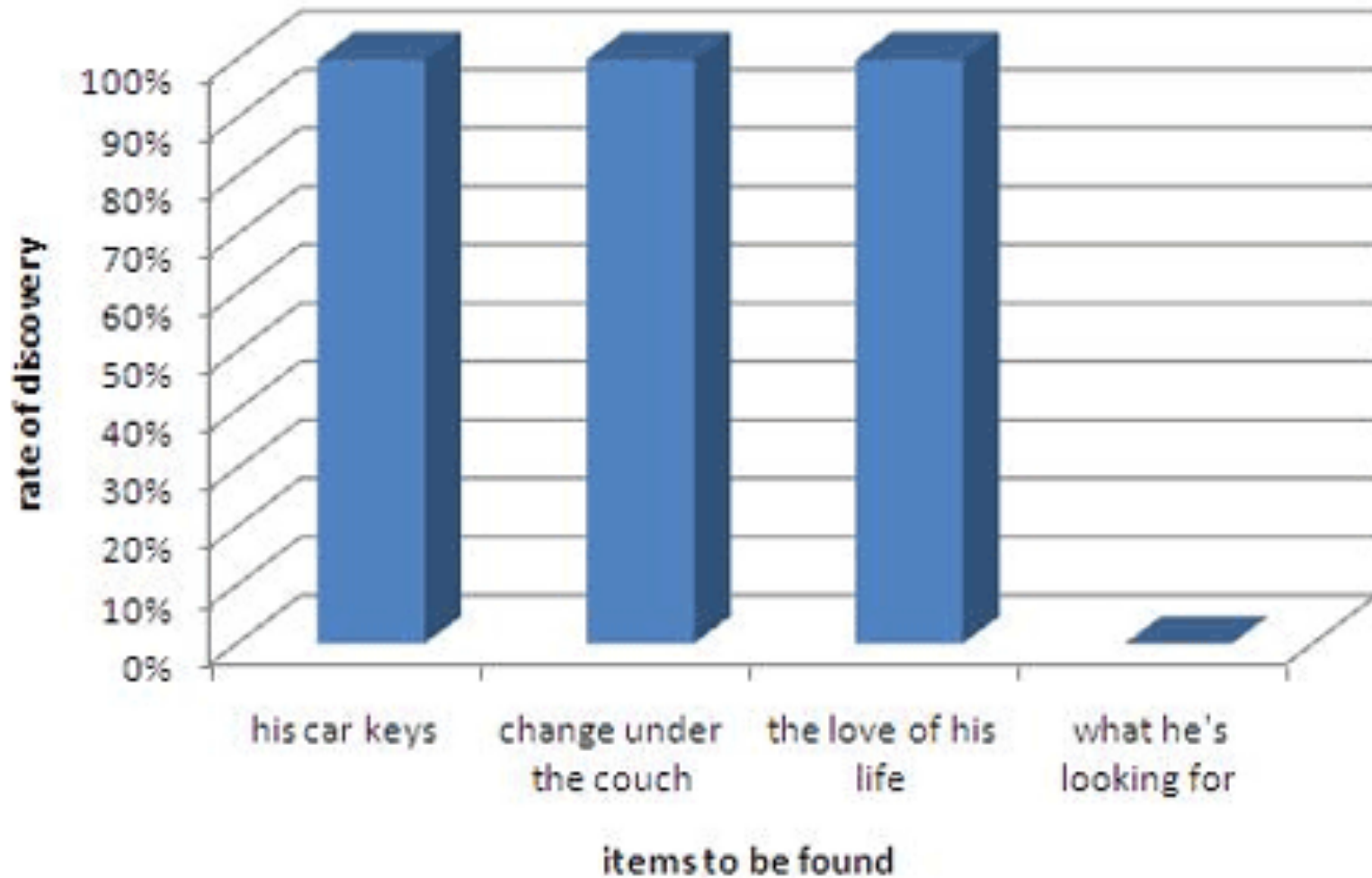


That

Best Time To Take A Look At Me

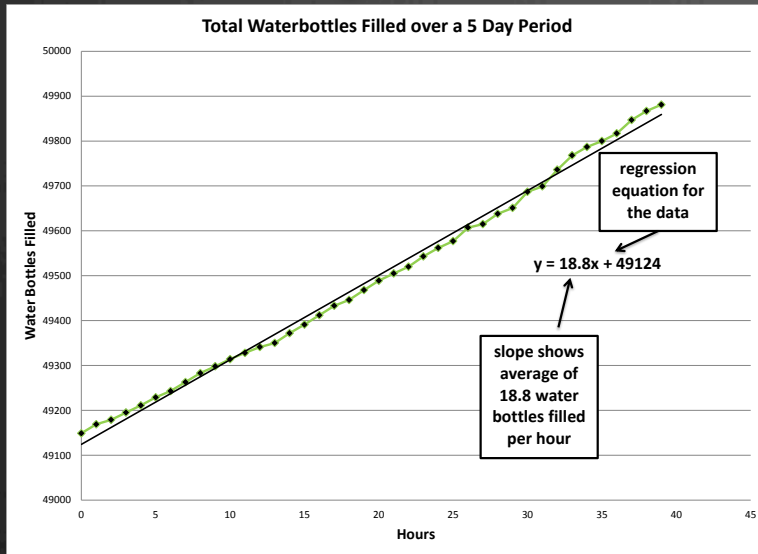


Things Bono Has Found



Your best STEM activity?

Simple data in your school...







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old magazines + scissors + polygon = art



STEM is Everywhere!



Your biggest STEM failure?

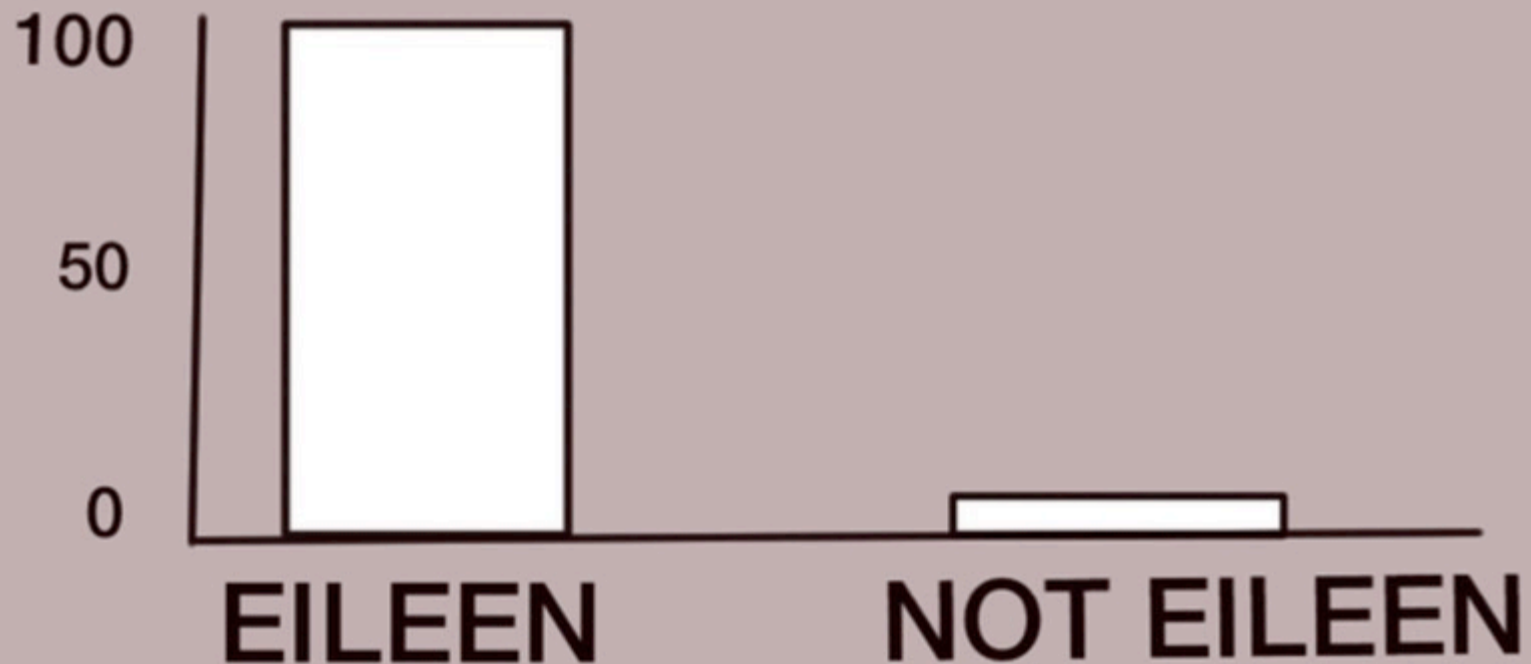


Things U Can Touch



Source: M.C. Hammer

People Who Should Come On



Source: Dexy's Midnight Runners

Best new STEM idea you've
learned at MACUL?

www.instructables.com



instructables

Let's Make ...



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AUTODESK. Make anything.


Let's Make rockets



EVERYTHING
TECHNOLOGY
WORKSHOP
CRAFT
HOME
FOOD
PLAY

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A workshop background with various tools hanging on a wall and a workbench in the foreground. The wall is covered with an assortment of tools including wrenches, pliers, and screwdrivers. The workbench in the foreground has a vise, a metal part, and other tools.

**To invent,
you need a good imagination
and a pile of junk.**

-Thomas A. Edison

We have enough
Instruction

We need more
Inspiration

Sometimes we have to
break the “rules” & do
some STEM because its
awesome!

Ideas...

Percentage of People Working for the Weekend



Change your Desktop...

3 biggest fears of our generation:



Change your Desktop...



Change your Desktop...



- Sky
- Sunny side of the pyramid
- Shady side of the pyramid

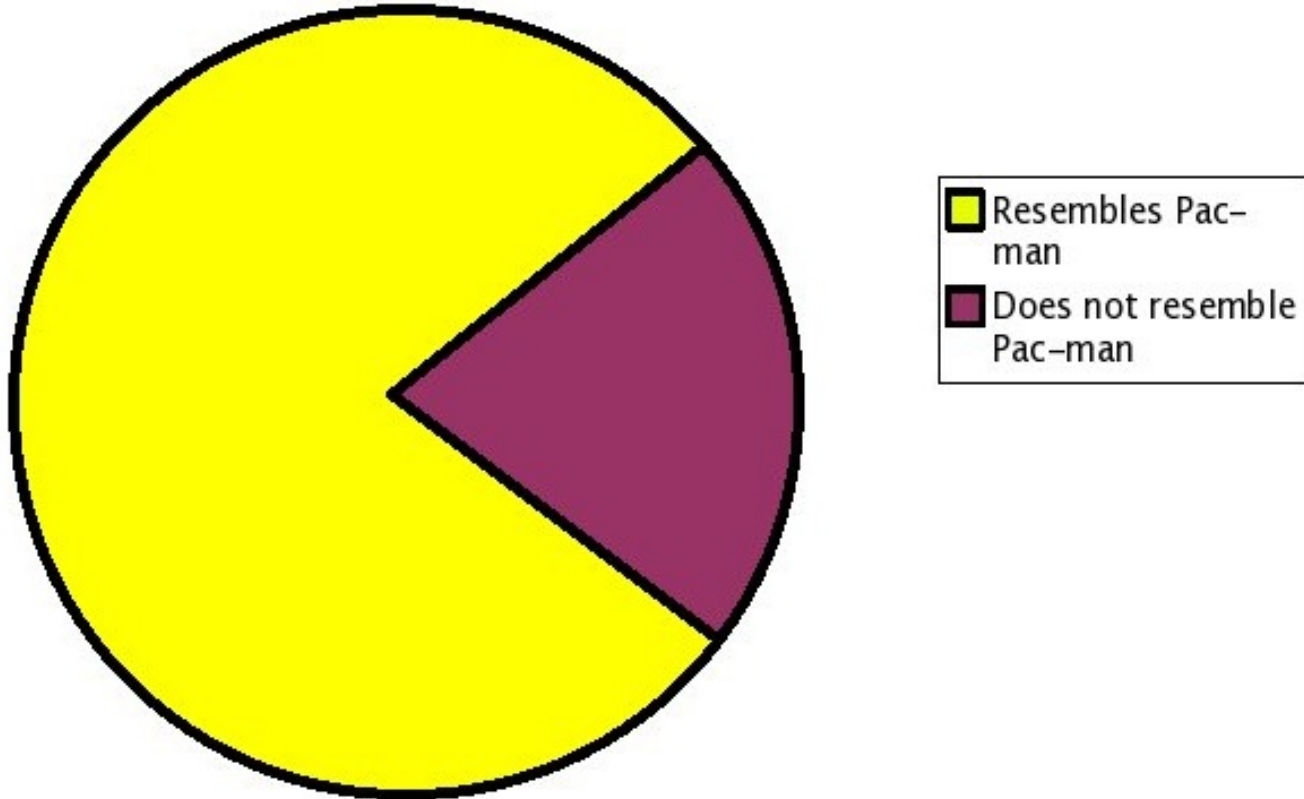
Change your Desktop...

**Art without
engineering is
dreaming.
Engineering
without art is
calculating.**

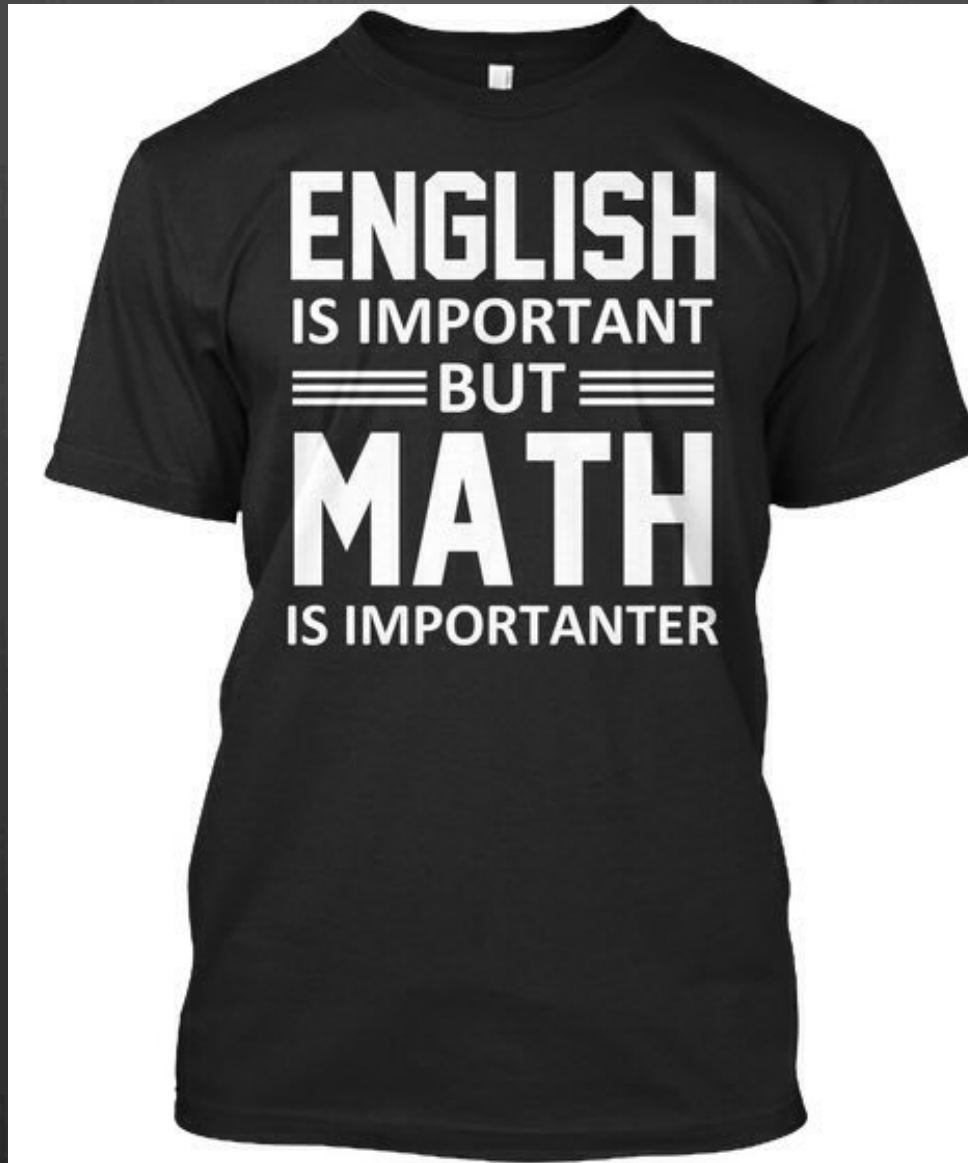
- Steven Roberts

Change your Desktop...

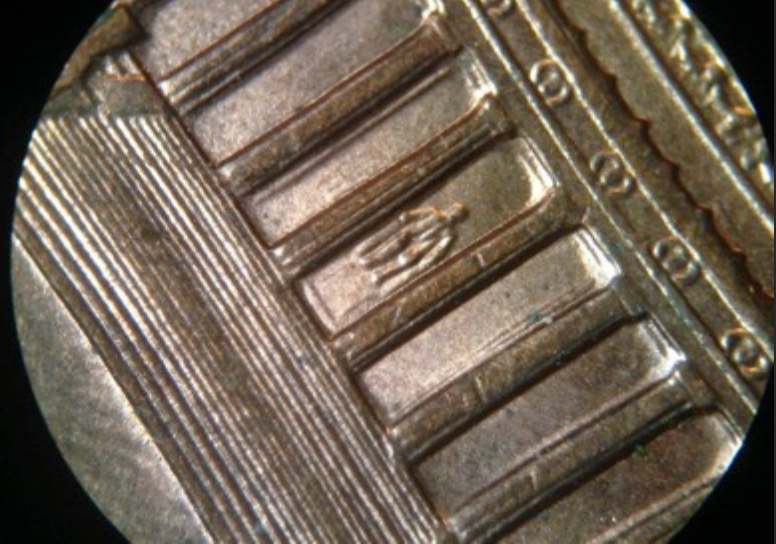
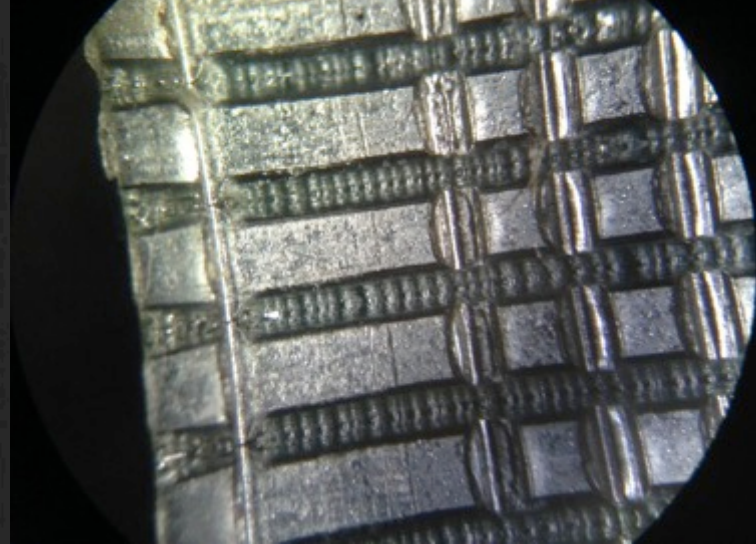
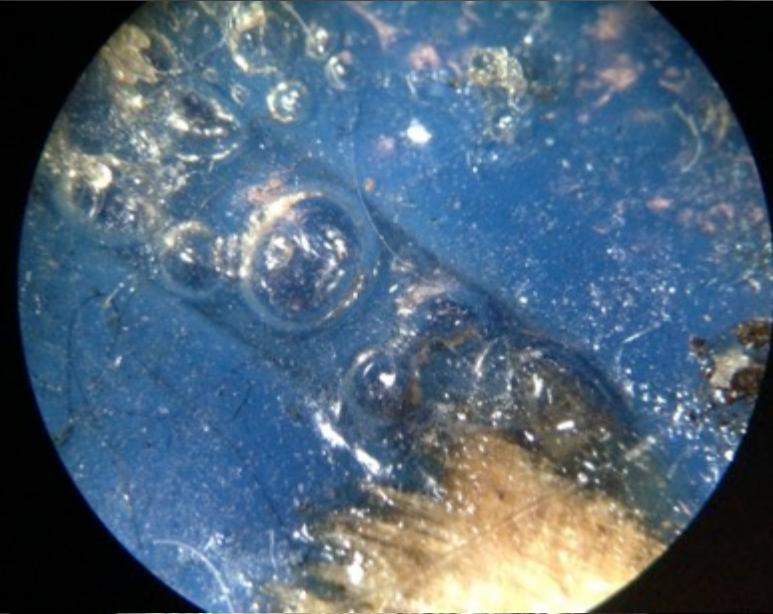
Percentage of Chart Which Resembles Pac-man



#TshirtTuesday



#MondayMicroscope



“Mr Woods, look what I made!”



What's your favorite
STEM movie?



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STEM Movies...



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Pixar in a Box

< PARTNER CONTENT

Pixar in a Box



Pixar in a Box is a behind-the-scenes look at how Pixar artists do their jobs. You will be able to animate bouncing balls, build a swarm of robots, and make virtual fireworks explode. The subjects you learn in school — math, science, computer science, and humanities — are used every day to create amazing movies at Pixar. This collaboration between Pixar Animation Studios and Khan Academy is sponsored by Disney. If you have questions or ideas, email us at piab@khanacademy.org.

#MythbustersMarch



Adam Savage ✓

@donttrythis

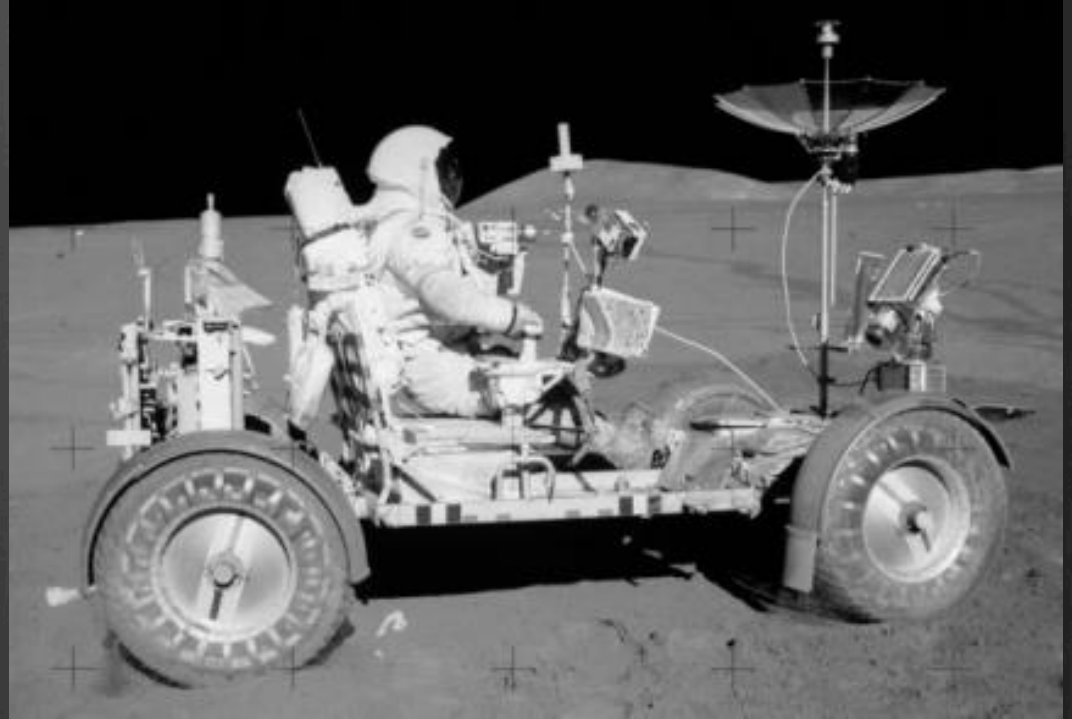
Hi, I'm Adam. I'm 19 & want to make a living making things. This is my shop in my parents' basement. [#NationOfMakers](#)



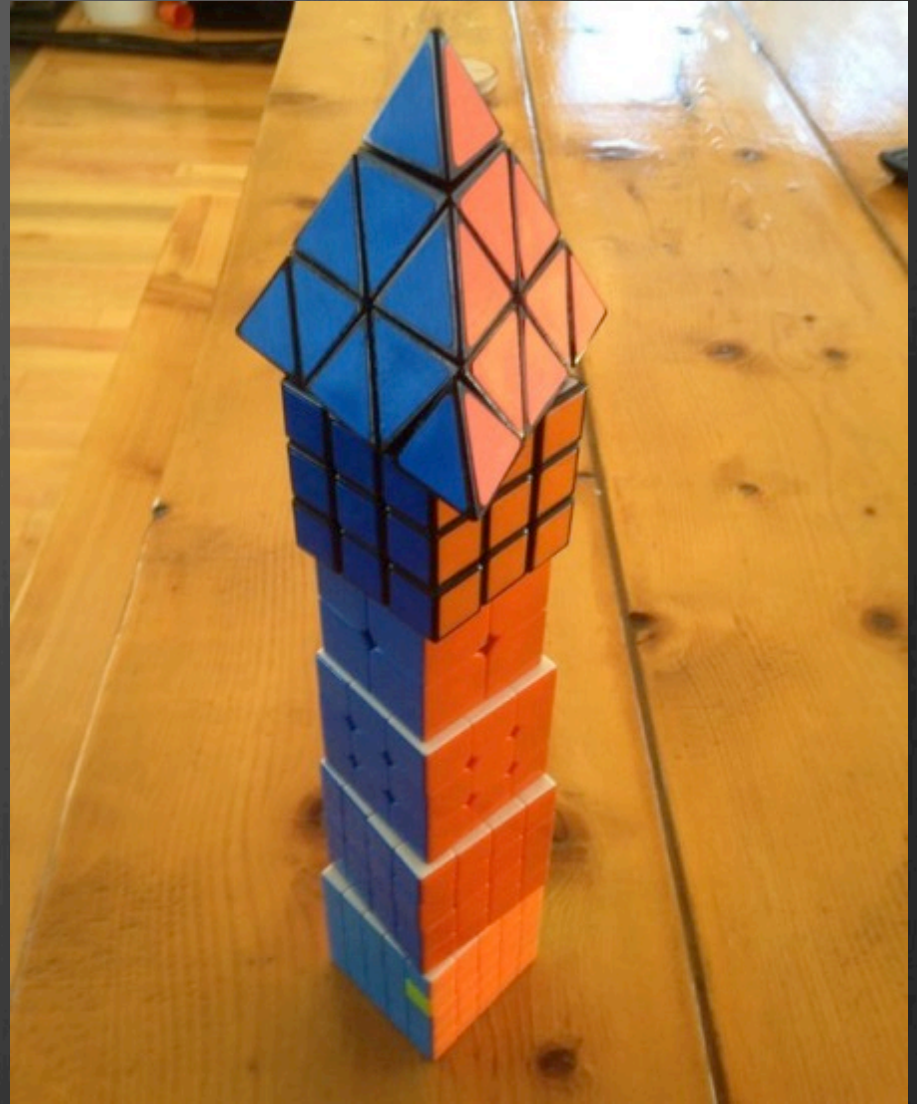
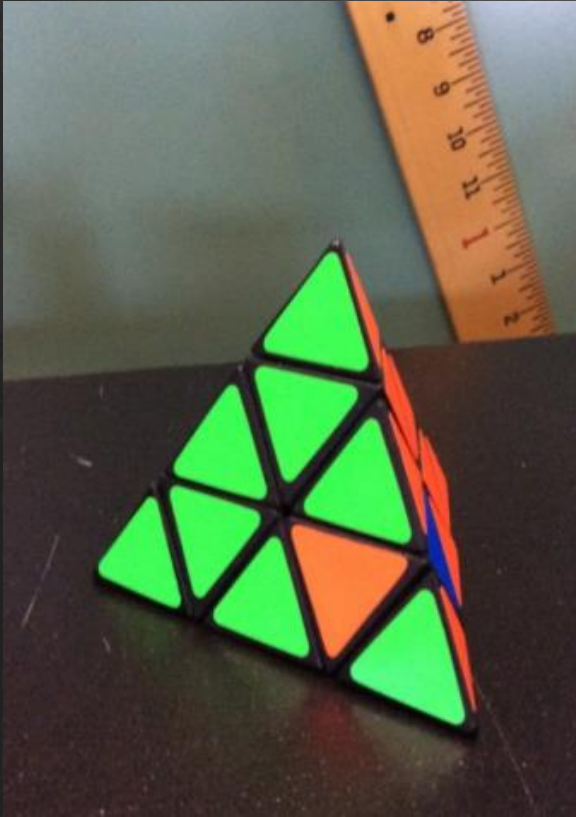
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Interview a relative or senior citizen



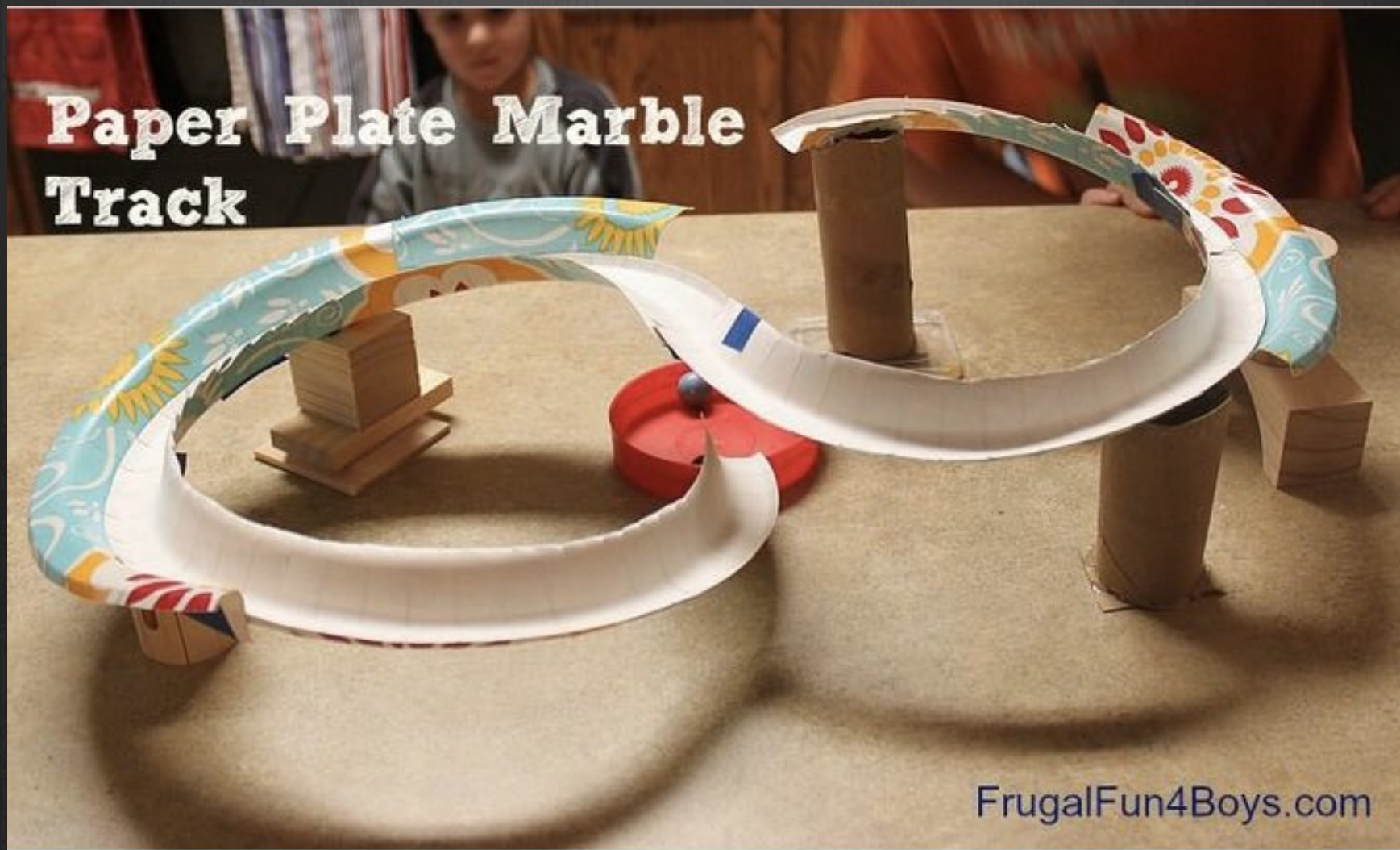
From garage sale to life changing...



#TshirtTuesday



Paper Plate Marble Track



FrugalFun4Boys.com

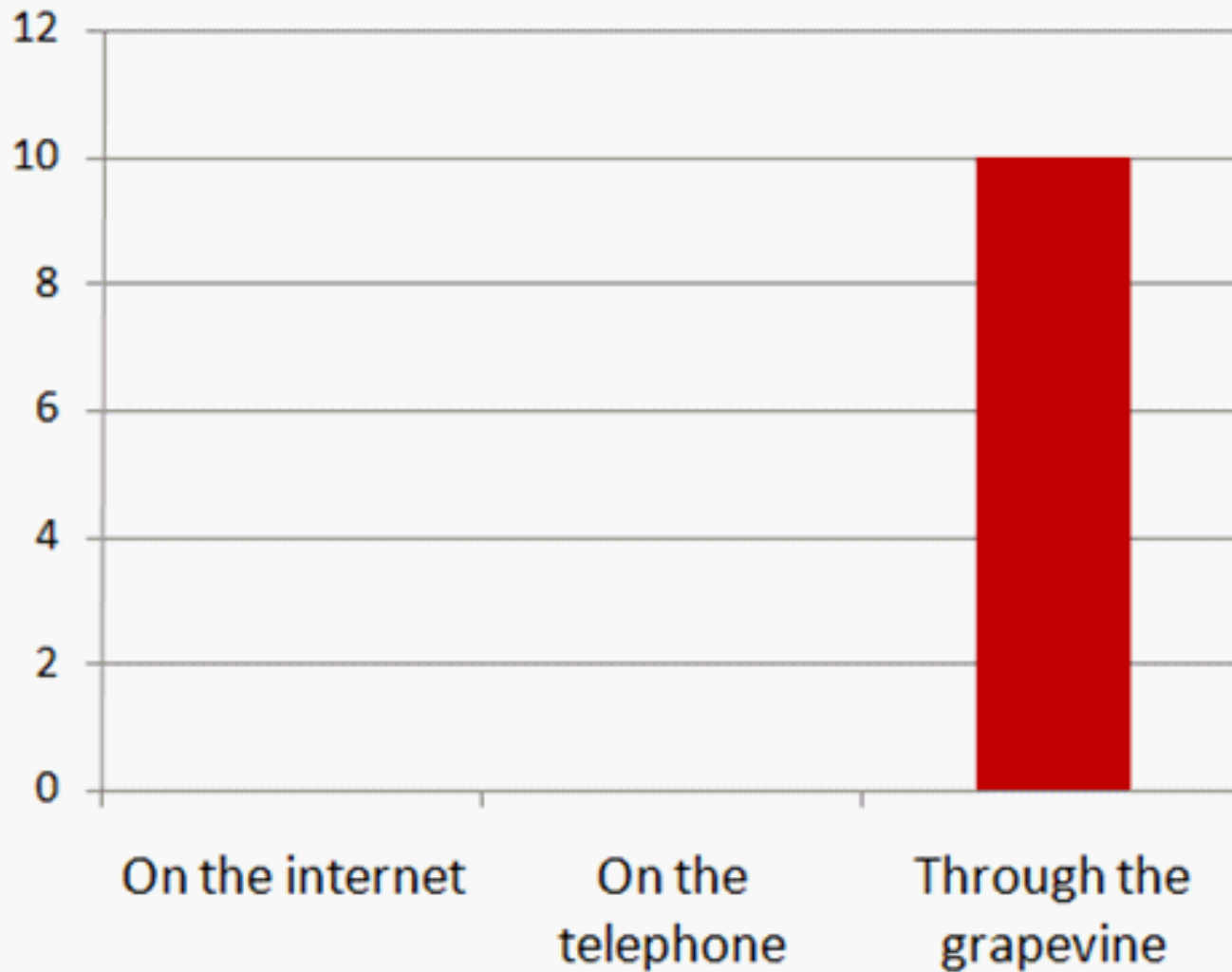
What's by your pencil sharpener?



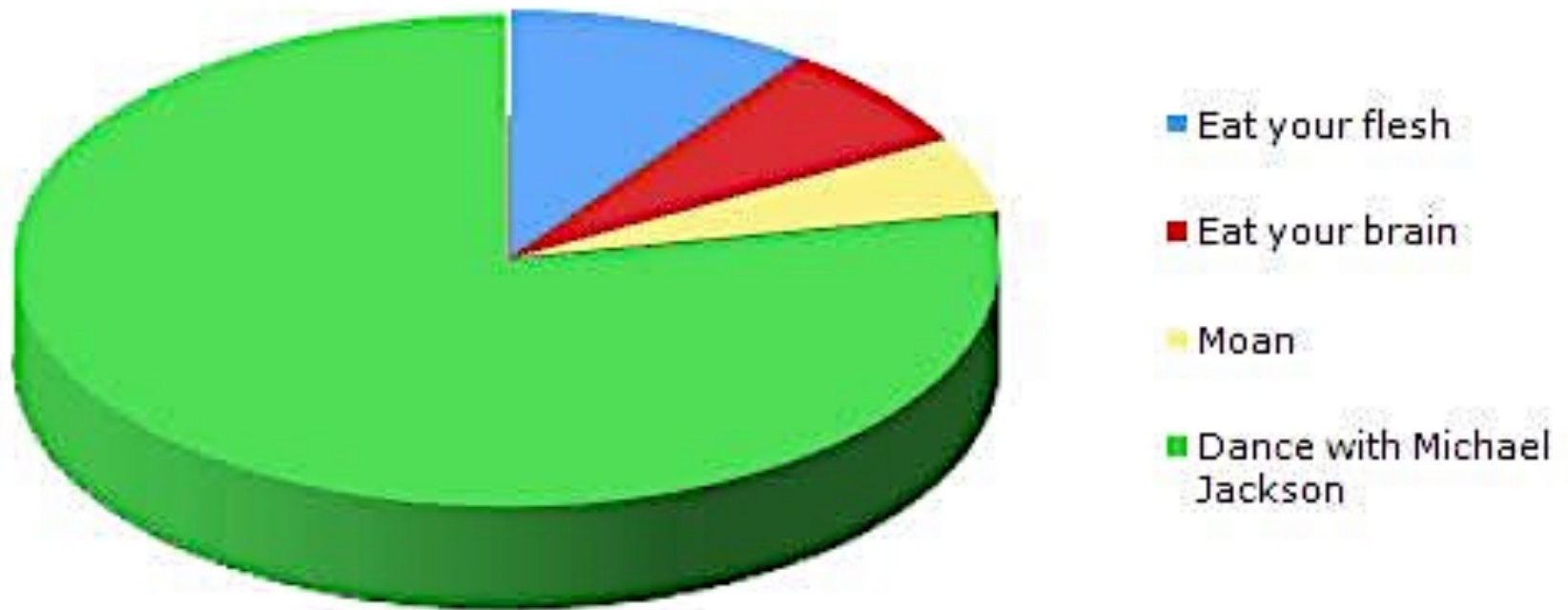
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Where Marvin Gaye gets his gossip



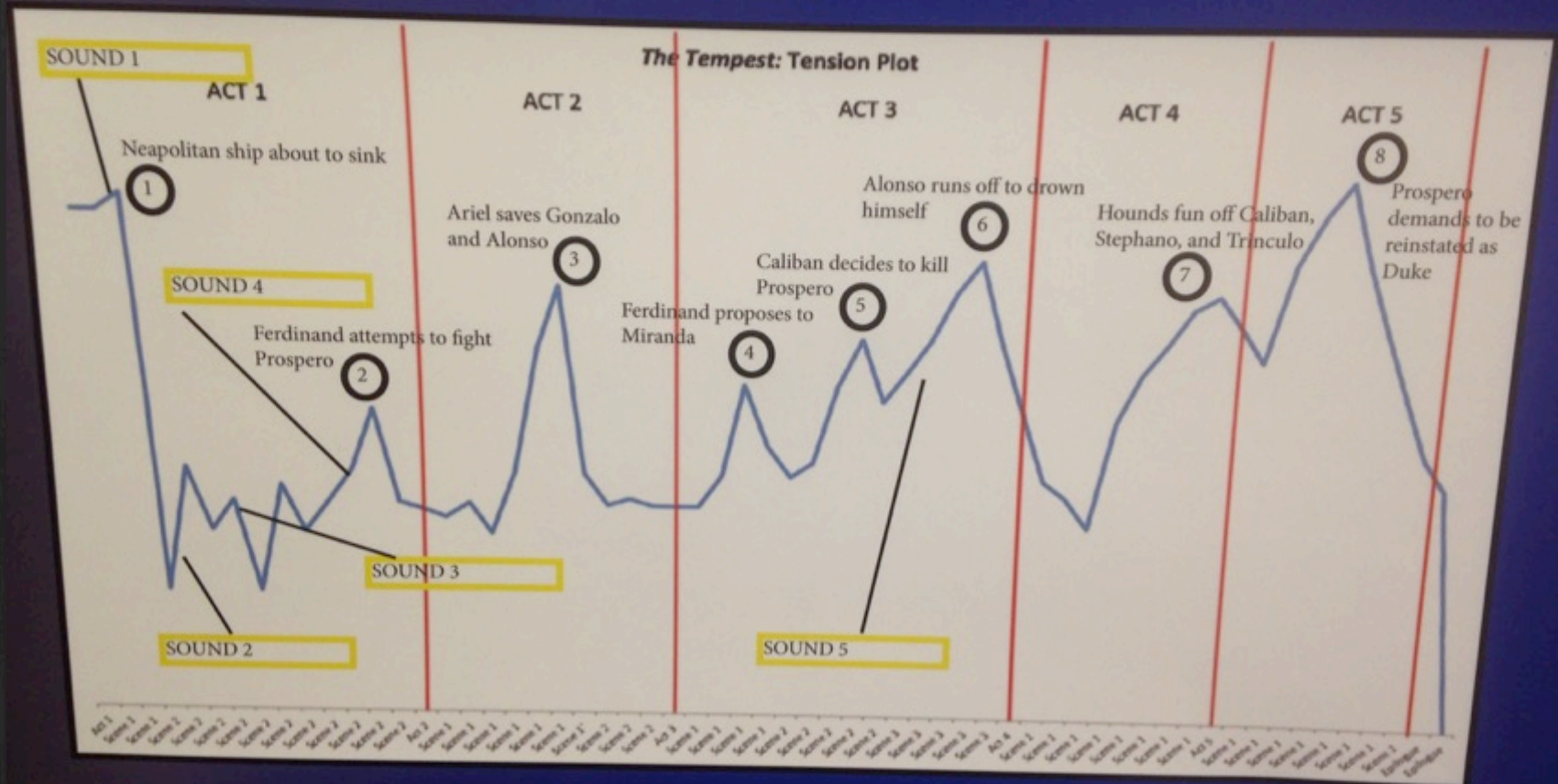
Things a Zombie Would Do



Tension Plot:

strates now I imagine the setting

<http://www.buin.corsica/fr/>



Sound Cues:

01 : Tempest Storm : Act 1 Scene 1 : Cue #1

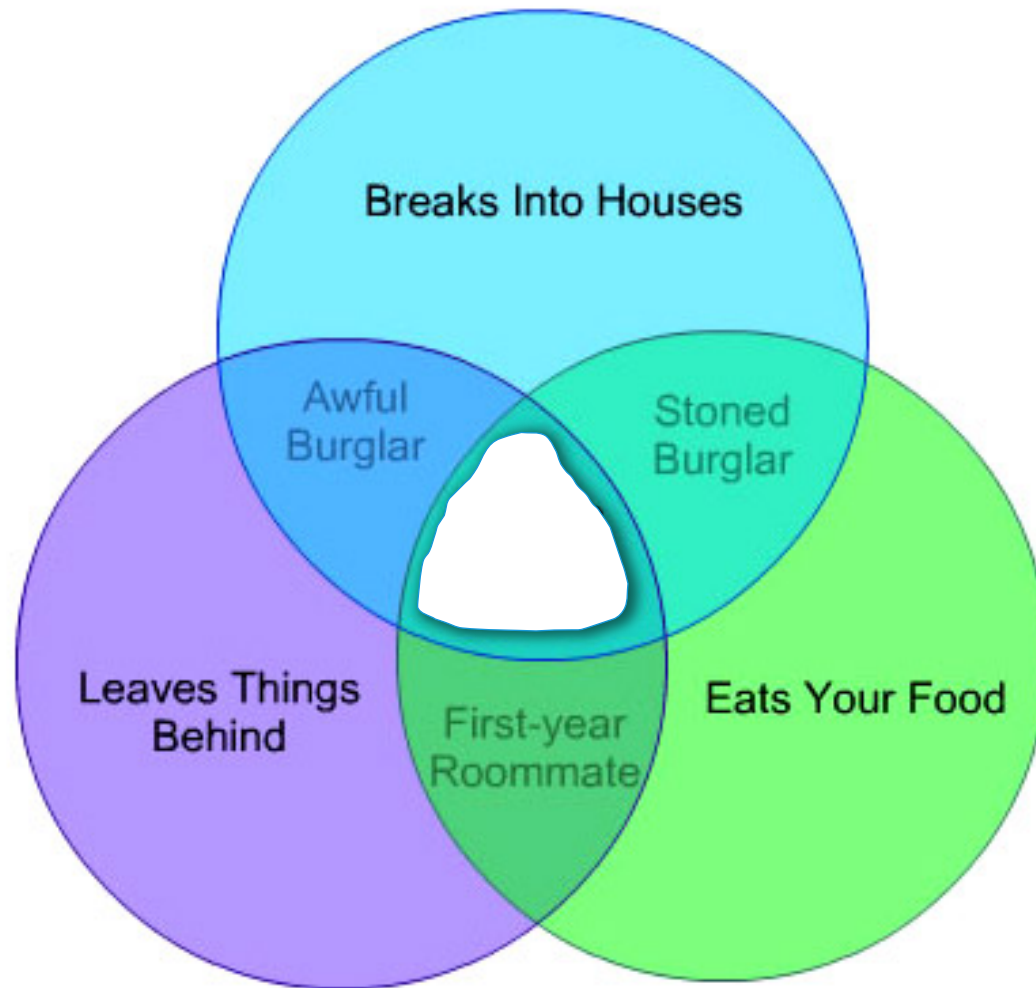
This cue is the opening sound for the play. It sets a precedent for the rest of the sounds of the play by meshing together

02 : Island Ambiance : Act 1 Scene 2 : Cue #6

This cue serves as a backdrop for the opening scenes on the island



Just Who is This Guy?





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Have you ever heard this...

“I was never any good at math”

-Parent

“I used to be good at math”

-Student

We tell Parents to **READ** to their kids
Let's tell Parents to do **STEM** with their kids



Stories...talk about STEM
Trips...visit STEM places
Exploring...go outside
Making...make stuff together



Henry Ford Museum



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<https://www.thehenryford.org/collections-and-research/>



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Parents need to know that Rocket Science isn't Rocket Science.

Give parents suggestions

Plan a STEM night at school

Ask parents to volunteer

77 Simple STEM Activities for Families

- | | | |
|---|---|---|
| Take a walk in the backyard | Read a biography of a scientist | Weed a garden & identify plants |
| Go to a museum | Watch an episode of How It's Made | Go rock hunting |
| Buy something at a garage sale & take it apart | Use a magnifying glass to search the ground for bugs | Design & build mini boats on a river |
| Fix a broken toy (instead of throwing it away) | Use a magnifying glass to start a fire | Visit a farm |
| Take a calculator to the grocery store & find the best prices | Read the news & look for numbers | Start a business |
| Use a big cardboard box to create a rocketship | Read the news & look for science | Build a solar oven & cook something |
| Play a card game that involves numbers | Interview a Senior Citizen about their experiences with STEM | Make a time-lapse video of something in nature |
| Play Connect 4 | Learn to use a compass (either kind) | Make a green screen video |
| Play Checkers | Make art using leaves | Play Monopoly |
| Play Chess | Fix a bike | Look at the stars |
| Get an old microscope & look at stuff | Ask a friend who owns a business for a tour | Try origami |
| Plant some seeds & record their growth | Do a science simulation on www.phet.colorado.edu | Draw a picture using only triangles, & rectangles |
| Pop the hood & look at a car's engine | Create something using www.instructables.com | Take pictures of all the things in your house |
| | | Build something using paper |

**IF NECESSITY IS THE MOTHER
OF INVENTION, PLAY IS THE
FATHER.**

- ROGER VON OECH -

Who To Call If There's Something Strange In Your Neighborhood



Source: Ray Parker, Jr.

Will YOU join the STEM Revolution?
How will you start?

Every teacher can be a STEM teacher

Every parent can do STEM with their kids

Do...and try.
-STEM



Thank You! I'm always willing to
help & chat & share ideas!

Chris Woods

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