



WELCOME TO
THE 2019 FRPA
CONFERENCE!



Speaker

Noreen Legault Mendoza
STEAM Education Coordinator
Nmendoza@Miami.gov

City of Miami 305-302-1678



STREAM

- 30% of all jobs will be lost to Robotics by 2030.
- 65% of children will be working jobs that have yet to be even created yet.
- STEM jobs are growing by 18.7% - other careers by 14.3%
- STEM wages are 29% higher than non STEM careers

LEARNING OBJECTIVES



- Learn how parks can improve the future of our children's life in: 45 minutes
- Experience hands-on best practices to make science education fun and exciting.
- Leave with innovative ideas to your parks to create their own program on any budget.

City of Miami
Department of Parks &
Recreation

Presents...
STREAM

STREAM

- SCIENCE
- TECHNOLOGY
- RECREATION
 - ENGEERING
 - ART
 - MATH

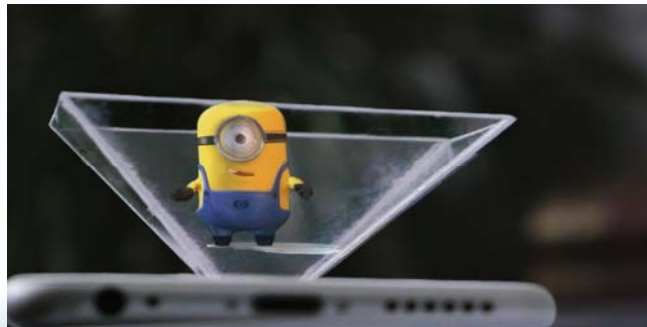
Tap into your 9 year old self..
... come out and play!!!!

Make Magic

CD 3D Movie Cell Phone

or

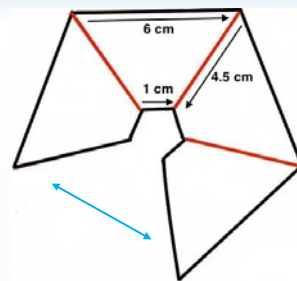
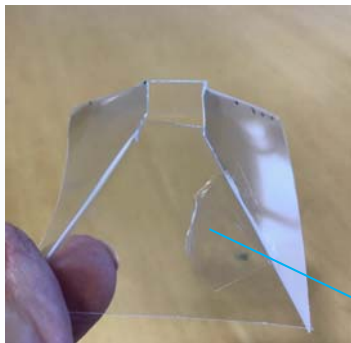
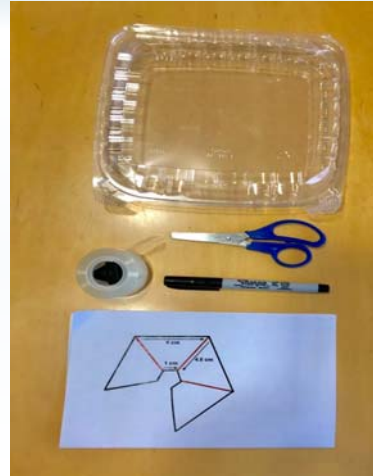
3D Hologram Video



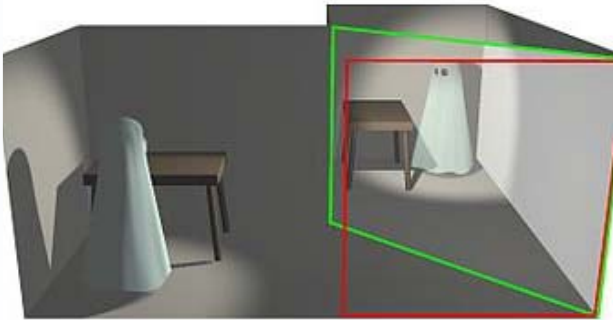
Hologram Nasıl Yapılır

Materials needed...

- Plastic packaging (acetate)
- Scissors
- Clear tape
- Permanent marker
- Smartphone
- Ruler



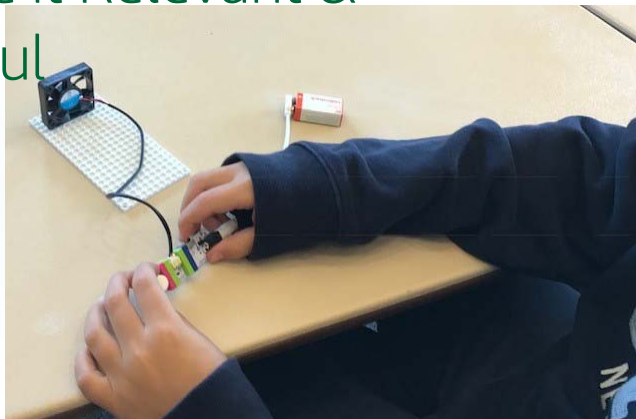
Use small piece of tape to join the edges.



- Based on the Pepper's Ghost Principal
- Scientist & Chemist
- First made popular in 1862
- Still used today in amusement parks, films, & theater performances.

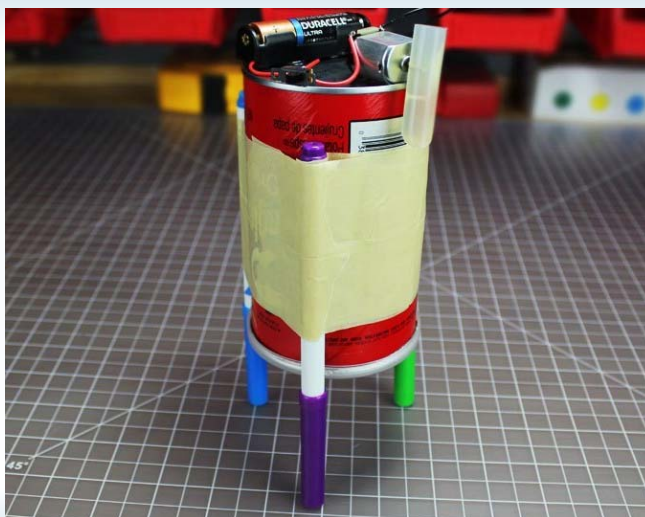
From Wikipedia

Make it Relevant &
Useful



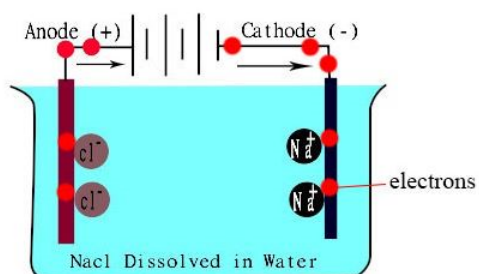
Hurricane Irma
Rescue Fan

Art Bots



Makerspaces.com

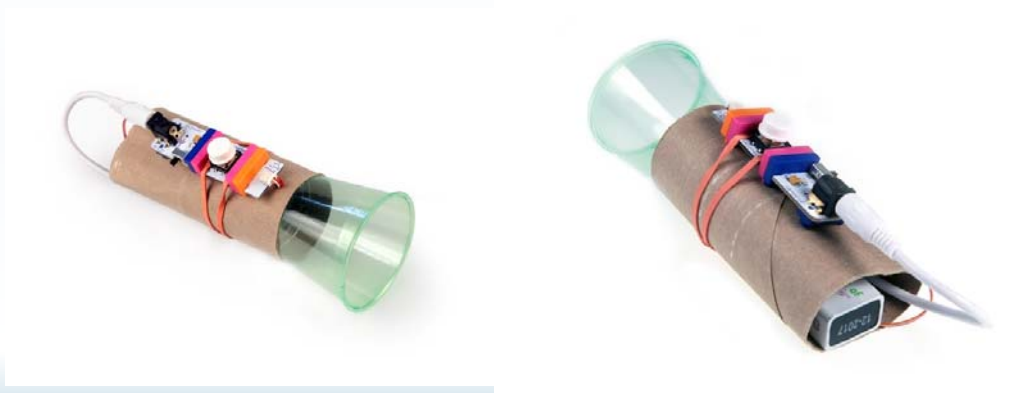
Electrical Magic



Is Salt Water Conductor of Electricity ?



DIY Flash Light



Electrical Circuits

- littleBits Workshop kit
(reusable)
- Color toilet bowl roll
(reusable)
- Rubber bands
(reusable)
- Amount spent = \$5012
- Students served – Apx. 2000
- Cost per activity **\$2.51**

Flashlight



Intermolecular Polarity, Density & Specific Gravity

AKA: LAVA
BOTTLE

- Small water bottle
- 3/4 cup of water
- Vegetable Oil
- Fizzing tablets (such as Alka Seltzer)
- Food coloring
- Cost per student = **\$1.61**



Forensic Science

- Magnifying glass (reusable)
- Cocoa
- Powder brushes
- Printer paper
- Tape
- Amount spent = \$197
- Students served – Apx. 2000 **\$00.98**
- Cost per activity =

I Spy Finger
Prints



Robotics – Battery Speed Car

Lego WeDo 2.0 Kit = \$185. (Reusable)



Engagement Methods

- We employ Children's Theater to GRAB THEIR ATTENTION and hands-on learning to make teaching memorable.



First photo: Oobleck for 1,800 rowdy campers at our yearly Summer Picnic
Non-Newtonian liquid experiment makes the kids go craaaaaaaazy.

Is it a liquid or a solid?

Guess
who's
design?

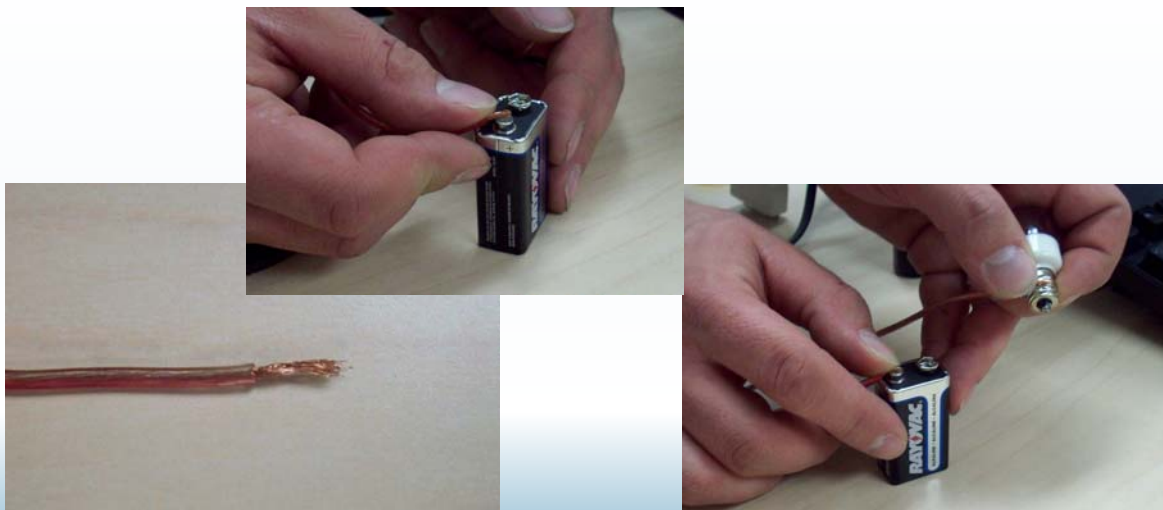
Mix pop
culture with
science!



"Muggles are naturally inclined to science
as wizards are to magic, although magic is
experimented with in a scientific (or at least nearly
scientific) manner. "FANDOM" Website



MacGyver Hurricane Flashlight



Think out
side the
box,
(except for the beer).



Silver Streamers



First Cell Phone
Selfie



Computer
Christmas
Card



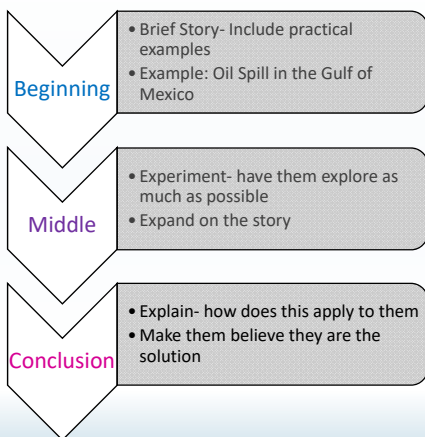
Science
Experiment

Accomplishments - Adults

- ✓ Tech Classes & Science Days
- ✓ 10 Locations
- ✓ 3 Languages
- ✓ 107 visits per week
- ✓ Word, E-mail, Internet, Pod-cast
oral histories, On-line business



Engagement Methods



Why RECREATION?

- FUN environments make experiences hold a longer retention time
- More likely to embrace failure – it's JUST another GAME
- No TEST
No STRESS
- Creates a truly inclusive and effective educational opportunity
- Opens up equal opportunities for the entire community
- STEAM activities provide benefits to ALL

Why ART?

- Without creativity there is NO innovation
- Students learn in an open ended way that is applicable to real life
- Arts help contribute to the development of complex problem solving, critical thinking and creativity
- Critical thinking creates an entire generation of innovators, not just workers
- It's FUN
- Memory is proven to be retained longer when processed through fun and engaging activities

Find Experiments Here

<https://www.stevespanglerscience.com>

<https://www.nasa.gov/audience/foreducators/5-8/features/afterschool-universe.html>

<https://sciencebob.com>

<https://littlebinsforlittlehands.com/science-experiments-and-activities/>

<https://leftbraincraftbrain.com/28-days-hands-on-stem-activities-kids/>

<https://www.steampoweredfamily.com/activities/top-science-experiments-readers-choice/>

Speake

Noreen Legault Mendoza, B.F.A
STEAM Education Coordinator
City of Miami, Park and Recreations
Nmendoza@miamigov.com
415 - 99 - STEAM



FOR MORE INFORMATION ABOUT THE FLORIDA RECREATION AND PARK ASSOCIATION VISIT FRPA.ORG