

# STEM Engagement

*Kristin Bing*

*Atlanta Section Vice Chair*

# Outline

- ▶ Family Science Nights
- ▶ Atlanta Science Festival
- ▶ Introduce a Girl to Engineering Day
- ▶ Girl Scout STEM Expo

**Don't forget to ask for PACE funds to support STEM events!**

# Family Science Nights

*Atlanta K-12 Outreach Chair – Melody Richardson, Richardson.Melody@gmail.com*

- ▶ Demonstrates the importance of science, technology, engineering, and mathematics in our students' daily lives
- ▶ Designed to build connections between classroom science and its real world applications
- ▶ Engage with practicing engineers in every activity
- ▶ Stimulates parents' interest in science and their children's science education



# FSN - Most Popular Activities

- ▶ Georgia Reptile Society
- ▶ Dogs!
  - Service Dogs via local police department
  - Canine Assistants
  - GA K-9
- ▶ Imaginarium
  - Helps with late comers
  - Constantly changing room filled with quick science activities where children can lead themselves
  - Three Little Pigs STEM Challenge, Edible Spine, Paper Plate Marble Maze, Marshmallow Geometry, and Straw Airplanes
- ▶ Build a Better Candy Bag
- ▶ Solar Cookies
- ▶ Robot Demonstrations



# Family Science Nights

## *By the Numbers*

- ▶ Presented to over 15,000 students in their families since 2008
- ▶ During the 2016-2017 school year, IEEE's FSN scheduled for 9 schools throughout Atlanta area (5 counties)
  - Average of 400 students and their families per FSN with an average of 18 different activities
- ▶ Serve elementary school kids aged 3-10 and their families with a special focus on Title 1 and ESL schools
- ▶ Average demographics
  - 29% White
  - 25% Black or African American
  - 31% Hispanic or Latino
  - 5% Other
- ▶ An average of 49.5% of our students receive a free or discounted lunch

# FSN - Budget

*~\$300/school*

- ▶ Printing
  - Tickets, worksheets, instructions, handouts, maps, labels
- ▶ Supplies
  - Construction paper, batteries, glitter, and various other components
- ▶ Example: Three Little Pigs STEM Challenge
  - Gumdrops, paper plate, cardstock piggy, toothpicks, hair dryer, gloves, handouts
  - Build gumdrop home to withstand the Big Bad Wolf (hair dryer) with only 12 gumdrops and toothpicks
  - Cost per student: \$0.75
- ▶ Example: Simple Circuits
  - Copper tape, surface-mount LEDs, coin cell batteries, tape, scissors, pencils, handouts
  - Students build a simple series circuit
  - Cost per student: \$1.20

# Atlanta Science Festival

## K-12 Outreach

- ▶ Curious Kids Zone: Engineer's Workshop and MOVE truck
- ▶ By the numbers: 30 pounds of gumdrops, 15 gallons of bubbles, a truckload of LEDs



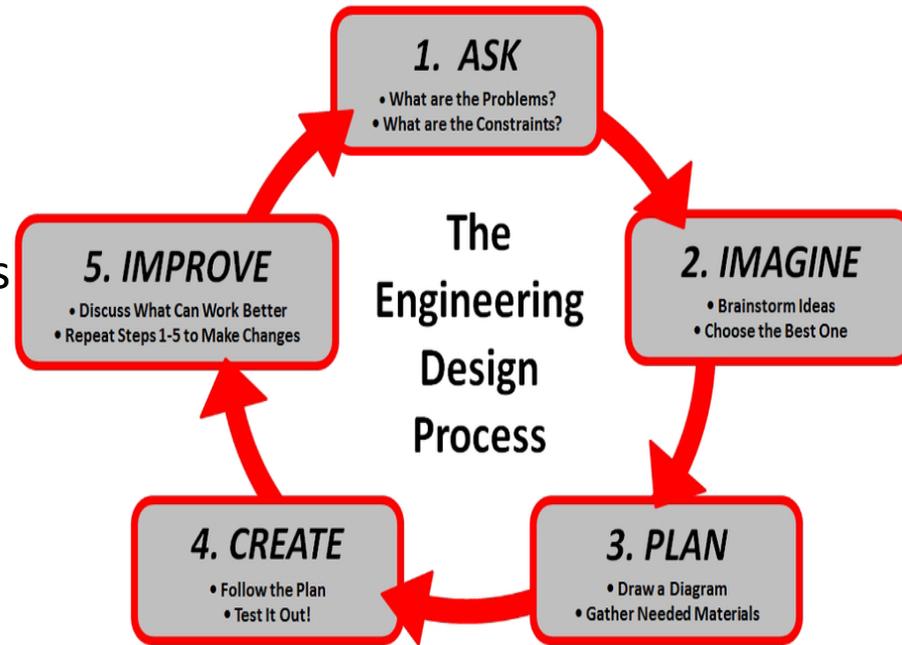
# Atlanta Science Festival



# Introduce a Girl to Engineering Day

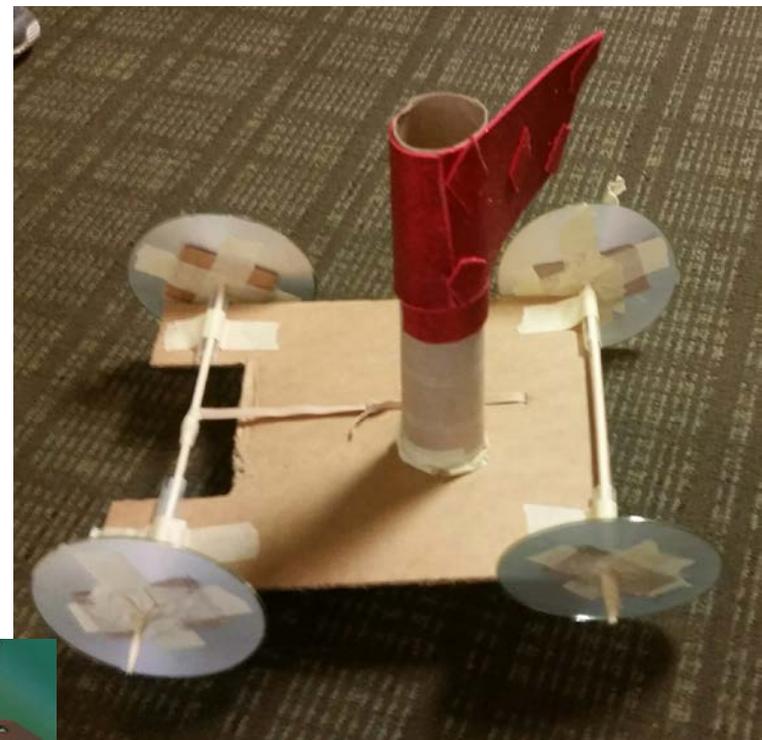
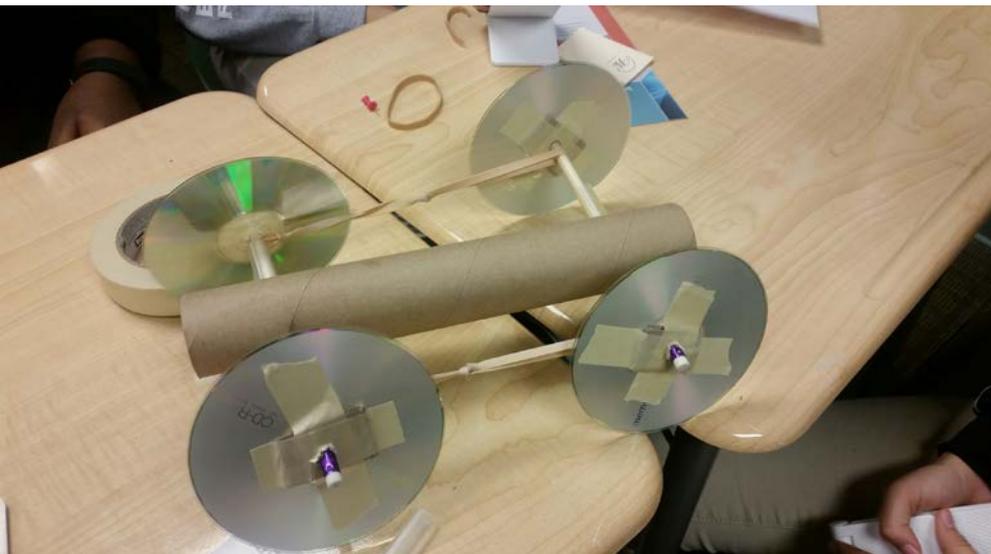
## *Women in Engineering Affinity Group*

- ▶ Yearly event at Ivy Preparatory Academy
- ▶ Ivy Prep is an all-girls public school serving grades 6-8
- ▶ This is an excellent age to engage girls in learning more about engineering
- ▶ By the Numbers: 20 volunteers to work with over 200 girls on an engineering activity that focuses on the engineering design process
- ▶ Emphasize that engineering is creative, collaborative, and fun.



# Introduce a Girl to Engineering Day

## *Rubber Band Racer*



# Girl Scout STEM Expo

## *Atlanta Women in Engineering Affinity Group*

- ▶ Showcase cool science demos
  - Blowing up marshmallows in a vacuum chamber!
- ▶ This event reaches over 1000 area girls
- ▶ Both men and women are welcome to volunteer



# Summary

## *Inspire Children in STEM*

- ▶ “I believe a big reason I am an engineer today is because my father is an engineer, and I received a lot of inspiration and encouragement from him. Not all kids are lucky enough to have that example. We need to be that inspiration and encouragement for the girls of today and working with Ivy Prep helps accomplish part of that.”
  - WIE Volunteer