

ROBOTICS IN THE CLASSROOM

STEPHANIE HANOVER

ALLEN ACADEMY SCIENCE AND STEM TEACHER



**MAKE SOMETHING
THAT
DOES SOMETHING**

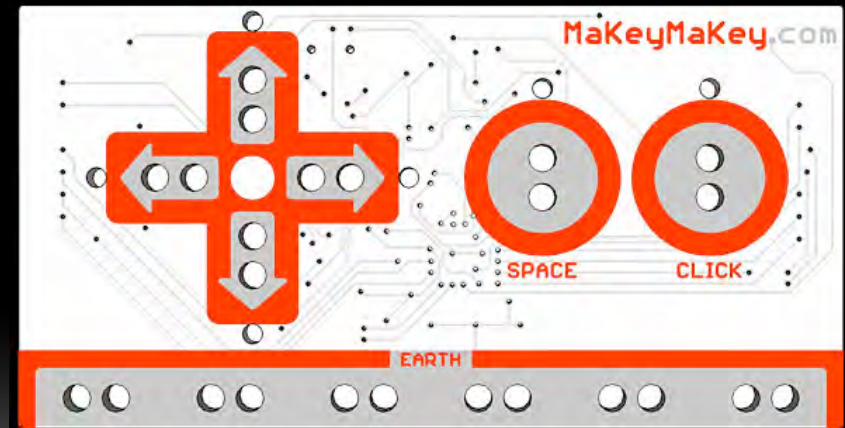
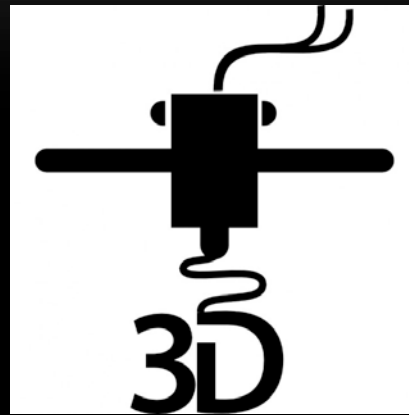
ROBOT

machine capable of carrying out a complex series of actions automatically,
especially one programmable by a computer

ROBOTICS OPPORTUNITIES IN COMPETITION AND IN CLASS



Boosting Engineering Science & Technology

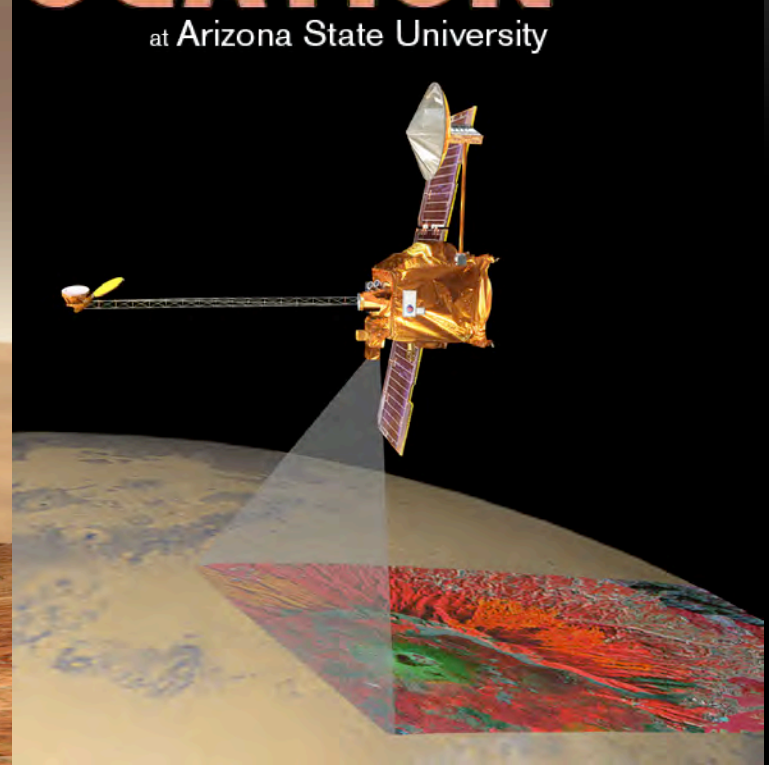


AND BEYOND



MARS EDUCATION

at Arizona State University



FOLLOWING ROBOTIC MISSIONS • CARRYING OUT OUR OWN MISSION ON MARS

Using robotics to investigate other worlds from the classroom!

BE CREATIVE!

THE REALITY:

SO MANY OPPORTUNITIES IN ROBOTICS - SO LITTLE TIME IN SCHOOL

- BE CREATIVE:
 - AFTER SCHOOL, DURING SCHOOL CLUBS
 - INTERVENTION TIMES – ENGINEERING/ROBOTICS TIME
 - CLASS DURING SCHOOL – ROBOTICS/ ENGINEERING (RAR)
 - MENTORS – COLLEGE STUDENTS, FORMER STUDENTS, EXPERTS
 - ALLOW FOR PARENT INVOLVEMENT

BEST ROBOTICS



Boosting Engineering Science & Technology

- SIX WEEKS: KICKOFF TO COMPETITION
- 6TH – 12TH GRADE
- TWO LEVELS OF COMPETITION
 - ROBOT + ENGINEERING NOTEBOOK
 - BEST COMPETITION
 - ROBOT
 - NOTEBOOK
 - BOOTH + INTERVIEW
 - ORAL PRESENTATION
 - SPIRIT + SPORTSMANSHIP

STEM COMPONENTS IN BEST

MECHANICAL ENGINEERING • CIVIL ENGINEERING
ELECTRICAL ENGINEERING
COMPUTER SCIENCE • MANUFACTURING • FABRICATION

REAL WORLD PROBLEMS
THAT REQUIRE
NEW PRODUCT DEVELOPMENT



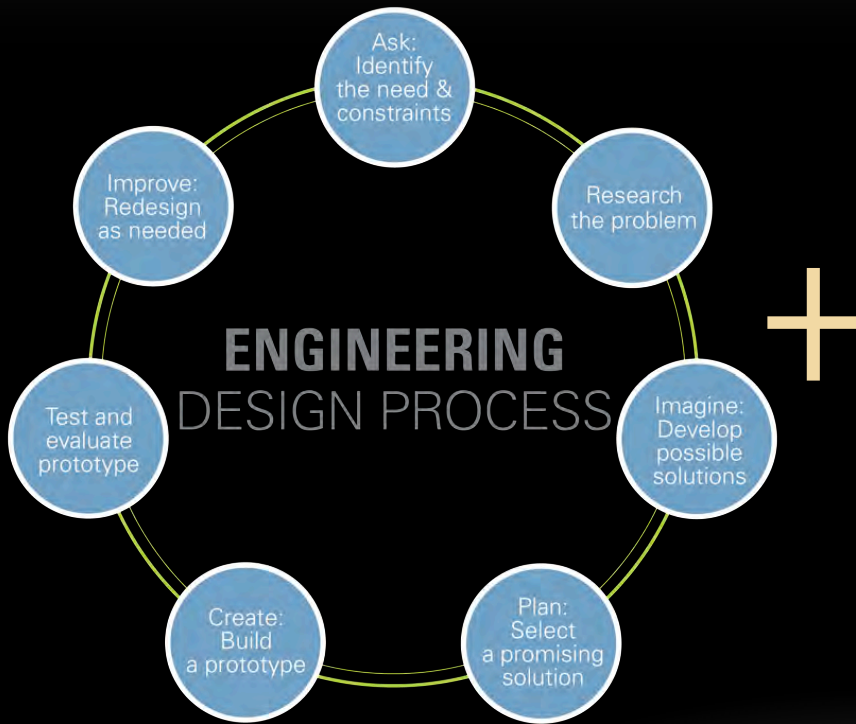
START WITH



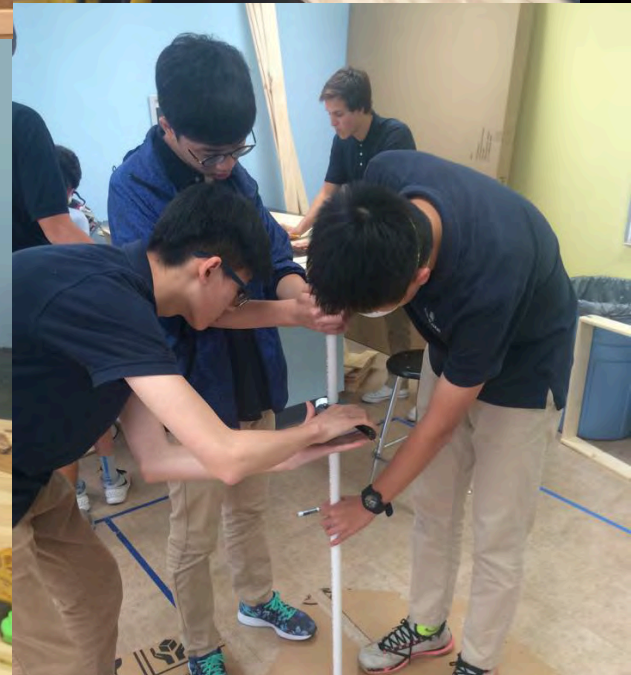
+



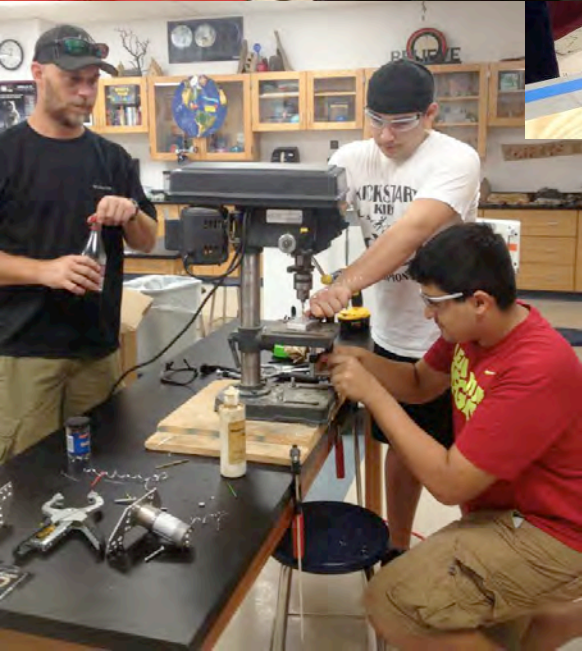
WORK WITH



TEAM WORK



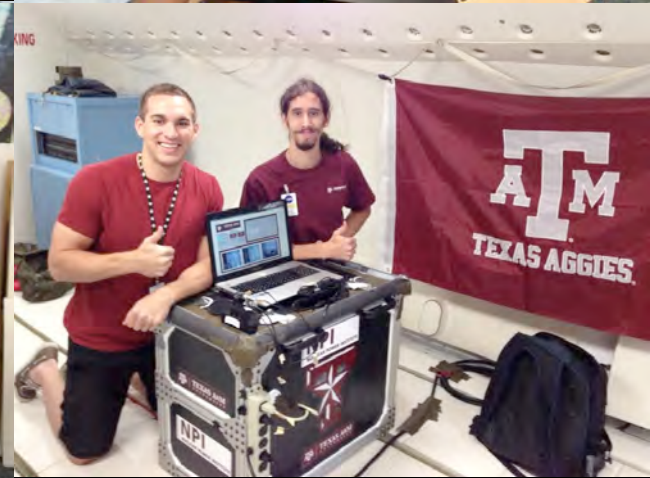
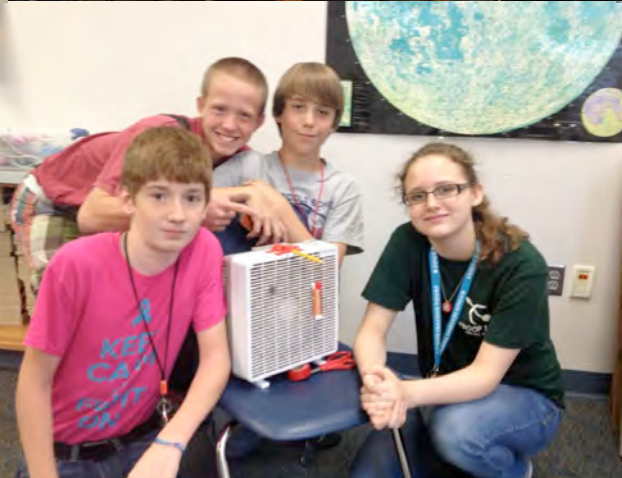
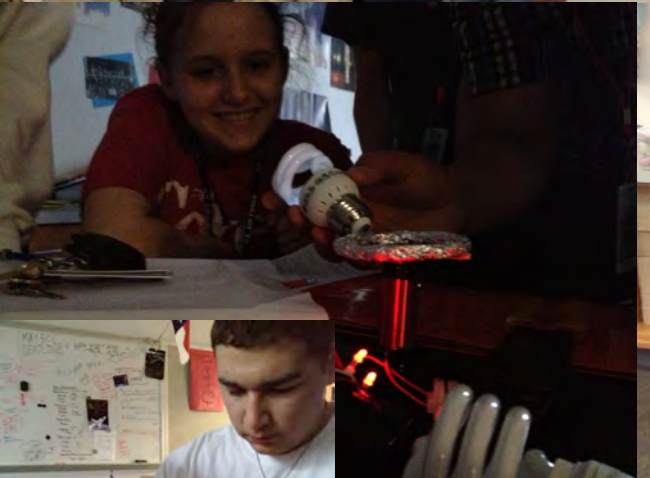
TEAM WORK



SIX WEEKS LATER...



MENTORS: AMAZING LEARNING OPPORTUNITIES



MICROGRAVITY PROJECT



THE GIRLS...

SOMETIMES SEPARATION IS THE TICKET!

- CAPSTONE: CHANGING THE PERCEPTION OF WOMEN IN STEM AMONG ADOLESCENT FEMALE STUDENTS
- IDEAS INCLUDE
 - EMPOWERMENT IN STEM!
 - SEPARATE CLUB FOR THE GIRLS
 - CHALLENGES FOR GIRLS: PROJECTCSGIRLS, NASA GIRLS, MAKEY MAKEY, LITTLE BITS, LEADERSHIP OPPORTUNITIES AND MORE!

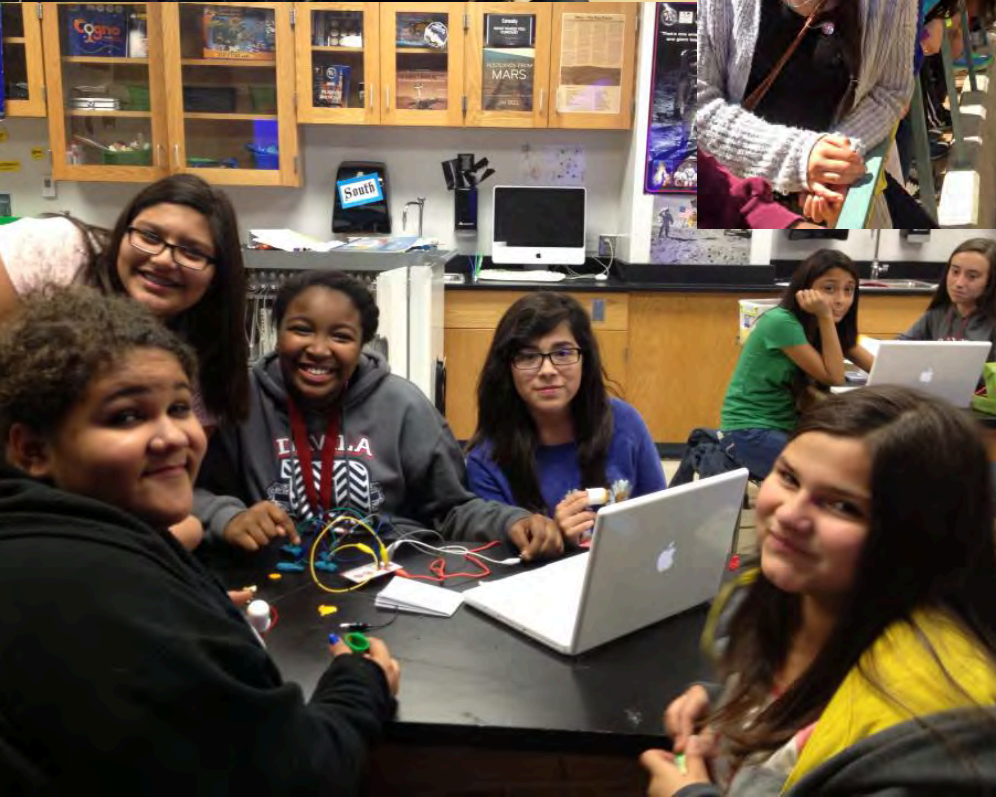
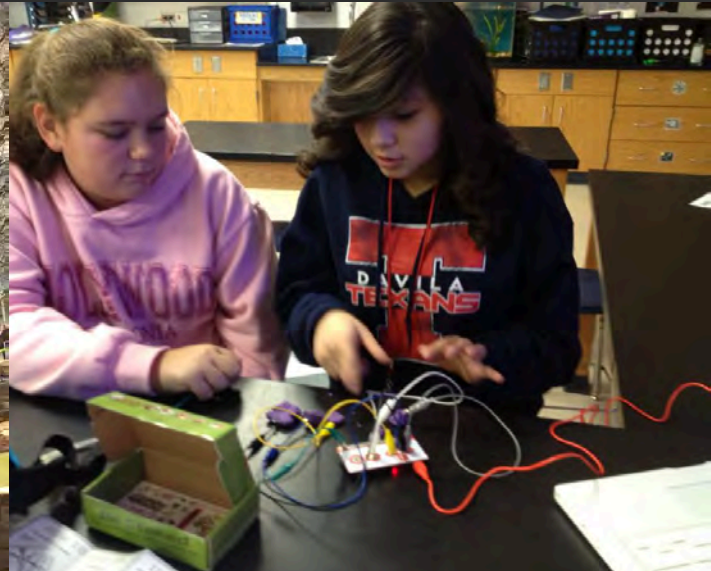
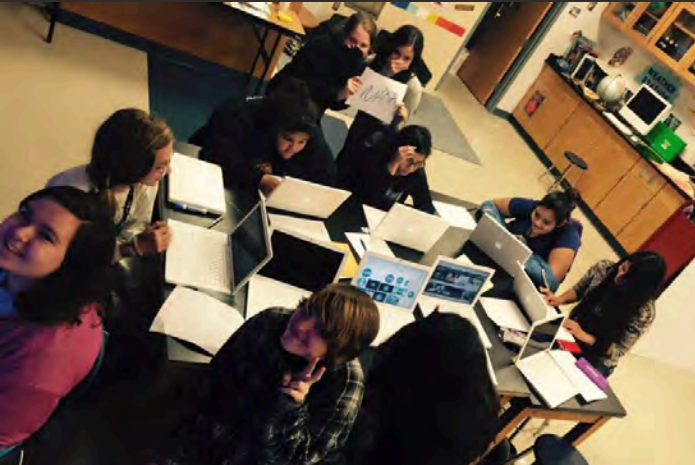


THE GIRLS...

ALLOW THEM TIME TO FIGURE OUT STEM WITHOUT THE BOYS CAN YIELD
EMPOWERMENT, OWNERSHIP, CONFIDENCE!



GIRL POWER!



THE WORLD OF STEM THROUGH NEW EYES

DRAW A STEM PROFESSIONAL

Hand draw a STEM professional below. On the reverse side, compose a description of your scientist, and explain the components of your drawing. Also, include what inspired your drawing.

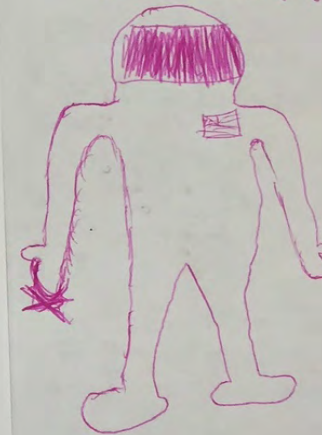


drawing #1
Student #4

It's my Dad he works on Body Shop cars.

DRAW A STEM PROFESSIONAL

professional below. On the reverse side, compose a description of your scientist, and explain our drawing. Also, include what inspired your drawing.

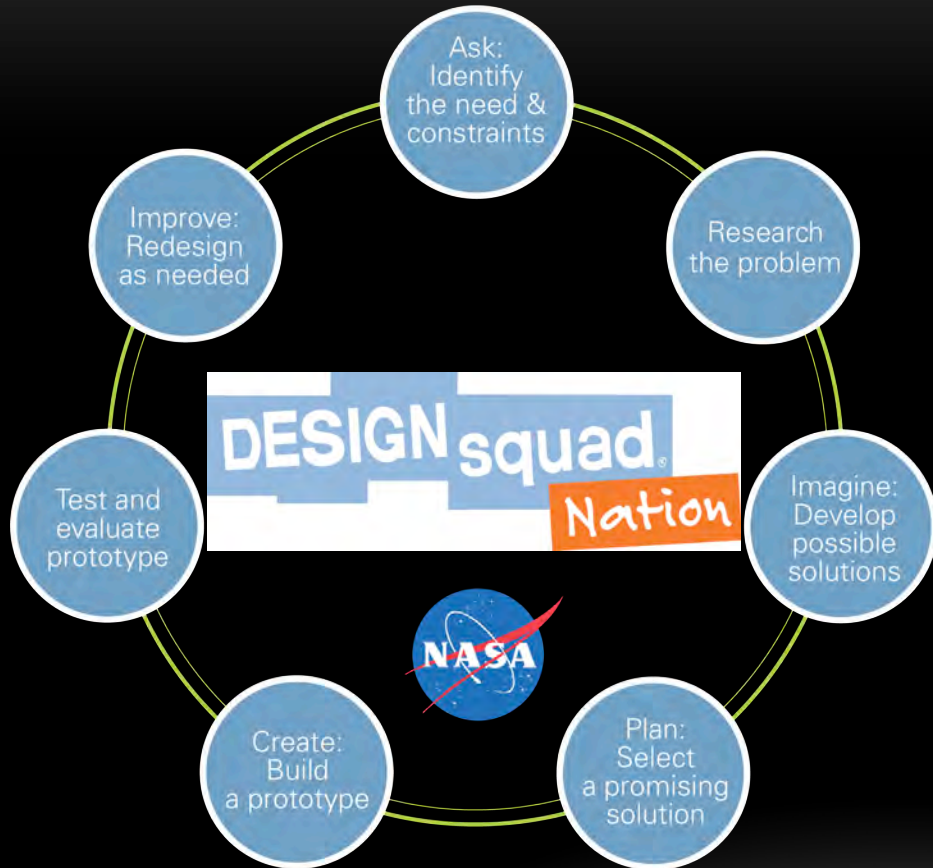


drawing #2

I want to be a astronaut
I got inspired by miss hanover
I would love to be a vpla
astro naut player.

QUICK ROBOTICS CHALLENGE

BUILD A GRABBING ARM
TO PICK UP THE CUP



QUICK ROBOTICS CHALLENGE



In BEST, all materials come in raw form. A piece of plywood, plastic, etc. For this challenge, and time constraints, your materials are precut to help you towards a finished product.

MATERIALS

- PRECUT CARDBOARD
- BRADS
- STRING
- SCISSORS
- TAPE
- PAPER CLIPS
- PRECUT STRAW

HAVE FUN!

