



A STEM PROGRAM

Science and Math Investigative
Learning Experiences

Newsletter

volume 27 No. 2, April 2021

27* Years of service

SMILE clubs around the state of Rhode Island have been busy with hands-on STEM.

This newsletter highlights some of our clubs.

Thank you for being a part of SMILE, enjoy!



SMILE students still gathered and still participated in some awesome science and math activities. Pictured here are experiments including building a Dayboat float, Tower of Power, Robotic Hand, and a Parabolic Skateboard Ramp.



CLUB UPDATES

Peace Dale Elementary, South Kingstown

Christine Pierce, Martha Badigian
By Peace Dale SMILE Club



Peace Dale's SMILE Club enjoyed exploring a variety of engineering-related lessons over the Fall semester. From exploring how to make (index card) tower structures strong enough to hold a stuffed animal for ten seconds, students explored design ideas such as varying the supportiveness of the base and what shape of tower was most successful. In the next club, students explored buoyancy and density in trying to design clay boats that could float in water and carry weight. Students used pennies or other household objects if they did not have pennies to see how much weight their boats could handle.

Students enjoyed exploring the varying degrees of osmosis experienced by gummy bears, depending on the type of liquid in which they soaked. Another experiment explored the relationship between force and resistance in blowing marshmallows through tubes by changing the variables such as length of tube, width of tube, and degree of force. Students also designed different parachute shapes to see how the different designs affected air resistance and therefore performance. Students had great time designing and building bridges and testing them for how much weight they could hold without collapsing. Exploring different types of bridges (beam, truss and suspension bridges), students designed and built bridges to hold the most pennies in a cup on the bridge.

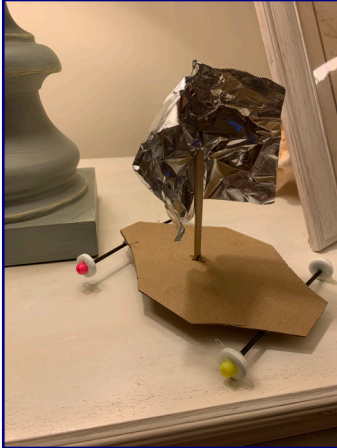
Students designed robotic hands which allowed them to explore joints and movements to create a "robotic hand". At another meeting we watched videos of Tours of the International Space Station, then played a Kahoot game to see how well we could recall details about the ISS.

Through these varied engineering exercises, students gained a good understanding of the many kinds of engineers that exist, as well as the science principles which are explored in these disciplines.

Thompson Middle School, Newport

Candace Lewia

By Emma Hoag



SMILE has faced a lot of changes this year. Every Wednesday, for an hour, we meet on zoom, rather than in a classroom, and attempt to complete a fun challenge. These challenges have ranged from helicopters to robotic hands! My personal favorite was probably a parachute challenge that we did where we had to design a parachute that would slow the fall of an action figure. I liked it because nobody came up with the same idea. All of our designs were different and innovative. The robotic hand challenge was probably one of the most difficult ones, but it was fun to see everyone's creative process and ideas. At the end, I even managed to get my hand to pick up a roll of tape! At the start of every meeting, we are given time to gather materials and hang out for a little bit. Then, we discuss a science topic related to the day's challenge. The challenge is then explained, and we are given 30-45 minutes to create a solution before we discuss our results. Sometimes we work in breakout rooms with other SMILE members to brainstorm and create a solution, so that we still get the teamwork aspect of SMILE despite the fact that we are all in separate houses. Overall, despite the current circumstances, SMILE meetings have been going great! Doing SMILE from home is just another challenge that we have been able to work through and overcome!

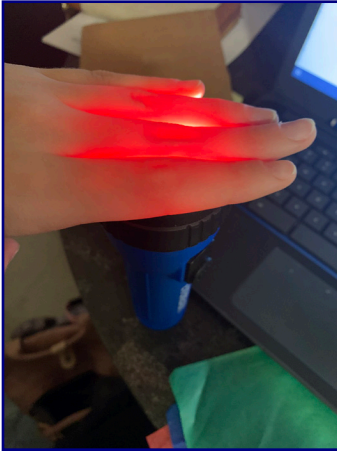


CLUB UPDATES

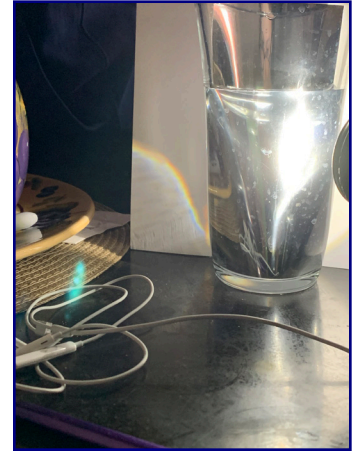
Woonsocket High School

Ethel Locke, Julia Grassini

By Kailey Ferreira



Even though we currently cannot be in person together the Woonsocket High School SMILE club has still been working hard and learning lots of new things. We created water wheels using a plastic water bottle, wooden dowel, and tape and even learned the equations to calculate the work and power it produces. Then we looked at the effect of a light beam aimed at a straight and parabolic-shaped mirror. By shining a flashlight at a mirror in a dark room, we saw that the reflected beam was scattered because it is not collimated. Another thing we did was create a parabolic skateboard track. To do this, we first had to create a data table using an equation and then plot those points on graph paper, which created the parabola. We then cut it out and assembled it into a ramp using cardstock, aluminum foil, and LOTS of tape. The last thing we did was explore light properties by shining a flashlight up to various items including aluminum foil, tissue paper, cardboard, and more. We tested to see if the light was absorbed, reflected, or transmitted.



The challenge of being virtual has not stopped the Woonsocket High School SMILE club from learning about science and engineering and doing fun activities.



Curtis Corner Middle School, South Kingstown

Valerie Light, Dillman
By Curtis Corner SMILE Club

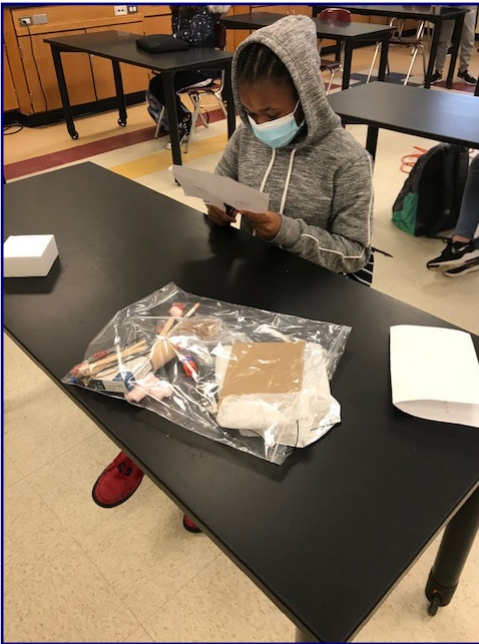
What an unusual year it has been for the Smile students at Curtis Corner Middle School this year. We have been enjoying making our engineering projects at home and sharing them with each other after school on google meets. Some of our favorites have been the spool racer, parachutes, and straw bridges. We are looking forward to completing a collective service project when the weather is warmer and we can spend more time outdoors. The birdhouses completed a couple years ago by SMILE members are actively the home to many birds around the school. We have just begun our work with magnets and will be completing the maglev trains before the end of the year. Mrs. Dillman and Mrs. Light give a huge shout out to all the SMILE students this year, it has not been easy during the pandemic with all the restrictions. We miss being together for our projects!



CLUB UPDATES

Woonsocket Middle School

Deana McCarthy, Michaela Gormley, Jennifer Hardy, Ian Chernasky
By Woonsocket Middle School Club Villa Nova & Hamlet



This past year SMILE was a little different from recent years. Since we need to follow COVID restrictions and protect ourselves and those we love, SMILE students are meeting virtually this year. In the fall, after we collected our materials, we began engineering our projects from home through the computer. We worked on testing out our clay boats and learned about density. We engineered (or tried to!) straw bridges that certainly taught us how to redesign! We really liked our Gummie Bear Osmosis project, and we were ReaLLy surprised how much the gummies absorbed the water! Something different this year in SMILE is that we are working in Kahn Academy to strengthen our Math skills. Presently, most of us have collected our new Spring project materials. We are finishing up construction of our paper helicopters. It will be interesting to see everyone's design, and how long they stay in the air! Soon we will be getting together outdoors to complete our stewardship project. This is a SMILE meeting that we are really excited about!

o its respective box

Build 1:

Circular:sunk at two pieces



CENTRAL FALLS

Calcutt 5th grade
Kelly Sierra
Molly MacDonald

Calcutt Middle School
Molly MacDonald

Central Falls High School
Austen Needleman

NEWPORT

Thompson Middle School
Candace Lewia
Elizabeth Gibbs

Rogers High School
Elizabeth Letourneau
Brooke Anderson

PROVIDENCE

Dr. Jorge Alvarez High School
Michelle Goewey

SOUTH KINGSTOWN

Peace Dale Elementary
Martha Badigian
Christine Pierce

Curtis Corner Middle School
Brenda Dillmann
Valerie Light

S.Kingstown High School
Christina Antaya-Dube
Amanda Varone

WESTERLY

State Street Elementary School
Nick Pendola

Westerly Middle School
Carolyn Michaud
Robert Brennan

WEST WARWICK

Horgan Elementary School
Maria DePalma
Amy Horne

Deering Middle School
Eugene Gallo
Christopher Baccei

West Warwick High School
Eugene Gallo
Christopher Baccei

WOONSOCKET

Harris Elementary School
Melanie Clark-Medyesy
Katherine Krause

Coleman Elementary School
Anissa Hoard
Brittney Pyszczynski

Citizens Elementary School
James Bucci
Jodi Michienzi

Woonsocket Middle School (2 clubs)
Michaela Gormley
Deana McCarthy
Marie Gentile
Jenn Hardy

Woonsocket High School
Julia Grassini
Ethel Locke

We would like to thank the following list of funders that have allowed SMILE to grow and continue to provide high quality after-school STEM programming to Rhode Island students:

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We would also like to thank our Individual Supporters, who are vital in helping The SMILE Program to continue its mission

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