

A STEM PROGRAM

SMILE

Science and Math Investigative
Learning Experiences

Newsletter

Volume 29, No 1. January 2023

*29 Years of Service **



Another exciting year has begun for the SMILE Program! On top of the weekly meetings, there were some very big and exciting field trips. As the Educational Outreach partner with Dr. Rainer Lohman's NSF Grant, SMILE and Dr. Lohman sponsored a trip to the Graduate School of Oceanography in October. Students from SMILE Middle Schools and Rogers High School were able to look at atmospheric and oceanic pollution and learn about the different studies of oceanographers, including sediments, animal life, and robotics. The Dr. Evan Preisser NSF Grant has partnered with SMILE to be the education outreach for its students, setting up trips to study the interactions between herbivores and plants at East Farm Demonstration Garden and Apple Orchard, and Norman Bird Sanctuary.



SMILE High School Seniors

College Check-list

Keep your grades up
Take SAT Exam
Apply to College

Remember it is always good to consider two “safety schools,” two “good matches,” and at least one “reach” college.

As soon as possible start working on your college applications, check the deadlines.

As you work on your application essays, have your parents, teachers, or counselors review them.

Teachers’ recommendation letters must be requested at least one month before the deadline.

During Challenge Weekend you will have the opportunity to talk to SMILE graduates about their college experience.

Look for Scholarships

Check your guidance school’s counselor office for local and national scholarship

Check out the following web sites www.RIScholarships.com; www.collegeboard.com

Financial Aid

Students and families should apply for financial aid. Contact the financial aid office at the colleges in which you are interested to find out about forms and deadlines

Fill out the FAFSA (Free Application for Federal Student Aid) to apply for financial aid soon after January 1, 2022 and Feb 15, 2022 to ensure it is received before the college deadlines. You can apply online at

fafsa.ed.gov.

Learn about college loan options. Borrowing money for college can be a smart choice, especially if you get a low-interest federal loan.

Need help with your college application?

1. www.ed.gov/prog_info/SFA/FAFSA

2. Call the SMILE office at (401) 874-2036 or send us an email at smileprogramuri@gmail.com

Visit College Planning Center of Rhode Island. Located in the Warwick Mall. Monday to Saturdays Noon to 7.00 PM and Sundays Noon to 3.00 PM. Phone: (401) 736-1182. Web: www.collegeplanningcenter.org

They offer help with the college admission process, how to apply for financial aid, free scholarship searches,

assistance in completing the admissions and financial aid applications, and more

CLUB UPDATES

PEACEDALE ELEMENTARY SCHOOL South Kingstown

Christine Pierce, Martha Badigian
By Peacedale SMILE Club



At our **1st SMILE meeting**, students really enjoyed working in pairs, developing teamwork and communication skills to “Save Fred”! At our **2nd SMILE Meeting**, our students had fun experimenting with index cards to see if they could build strong, tall towers, and they came up with quite a variety of designs. At our **3rd SMILE meeting**, students used clay to explore principles of floating and sinking. Their goal was to make a boat from clay that could hold the most possible weight (we used metal weights to add weight). At our **4th SMILE Meeting**, students learned about the range of jobs that fall under mechanical engineering, and then worked with Ski Jump Marbles, where they explored the concepts of angle (slope) and length to see how varying these things affected the distance that their marbles would travel. At our **5th SMILE Meeting**, students did the Cartesian Divers experiment, which uses a plastic bottle, water, and a diver. Students squeeze the bottle and see how the change in pressure affects how the diver floats or sinks. At our **6th SMILE Meeting**, slope and length were further explored when students designed Peppermint Racers. At our **7th & 8th SMILE Meeting**, students took on the Soaring Satellite Challenge to design a satellite that could float in the center of the tube for at least 5 seconds. We had a LOT of really creative designs, and students did quite a bit of redesigning. For our **9th SMILE session**, students crafted paper snowflakes for a bit of holiday fun, then built Gumdrops Geodesic Domes, further experimenting with building strong structures. For our **10th SMILE meeting**, the Roger Williams Park Zoo came to us to do a program called The Web of Life Program. It is described as: A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Students will examine how organisms in a local ecosystem are interrelated. They also brought three animals.

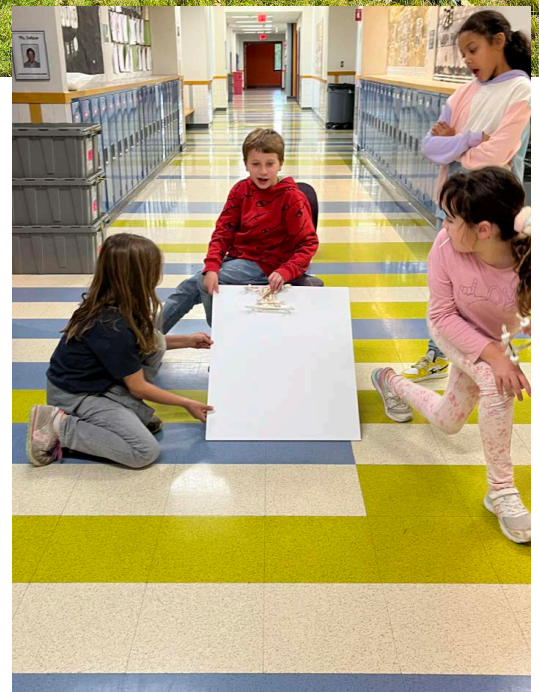
CLUB UPDATES

CLAIBORNE PELL ELEMENTARY SCHOOL Newport

Kevin Bolano, Jeannine Walsh
By Claiborne Pell SMILE Club

Hello from Pell Elementary school in Newport. We decided to launch our SMILE program with 2 field trips to build excitement for the program. The first learning experience was at the Norman Bird Sanctuary. The students hiked up to the top of Hanging Rock. Our tour guide spoke about the different habitats as we walked through (field, forest, ridge) and the plants and animals in each habitat. She explained a great deal about the rock formations, Pangaea and how the world began and changed using the rocks we were sitting on. Students learned about the different types of rocks (igneous, sedimentary and metamorphic) and rock formations. They each explored using magnets to search for magnetite between the rocks on the top of Hanging Rock.

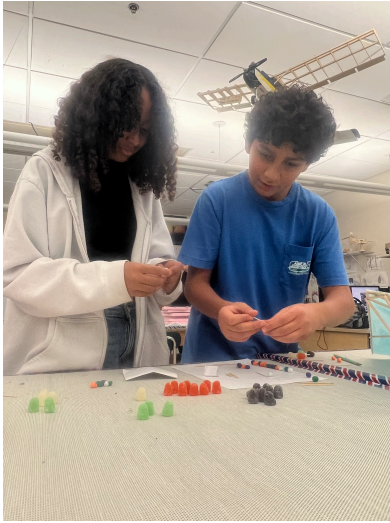
The second field trip was to the URI East Farm and Apple Orchard. We started by picking Liberty apples for ourselves, food pantries, and pigs on a nearby farm. We then traveled to the garden to see fruits, vegetables, and herbs grown and harvested for local food pantries. The garden was in the process of being put to bed. Students were able to sample some of the food still available.



CLUB UPDATES

WESTERLY MIDDLE SCHOOL Westerly

Carolyn Michaud, Robert Brennan
By Westerly SMILE Club



Here we go again! Another terrific start for our SMILE Club 2022-2023. Unfortunately, we lost some awesome students to the high school program this year. Hopefully, they are making that program as great as they did here at the middle school. We wish them the best! This year, we have many excited first time clubbers joining our team. They bring with them terrific personalities and energy for the projects we have completed, and the ones we will tackle in the future. Our veteran clubbers have jumped right in to take leadership roles that help all of us with the weekly challenges. So far, we have really enjoyed the Mars Lander, the Trebuchet, and the DNA Gene Sequencing units. All in all, we can't wait to see what we get ourselves into next and especially what is in store for us when we get to URI!



CLUB UPDATES

DEERING MIDDLE SCHOOL West Warwick

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By Deering SMILE Club

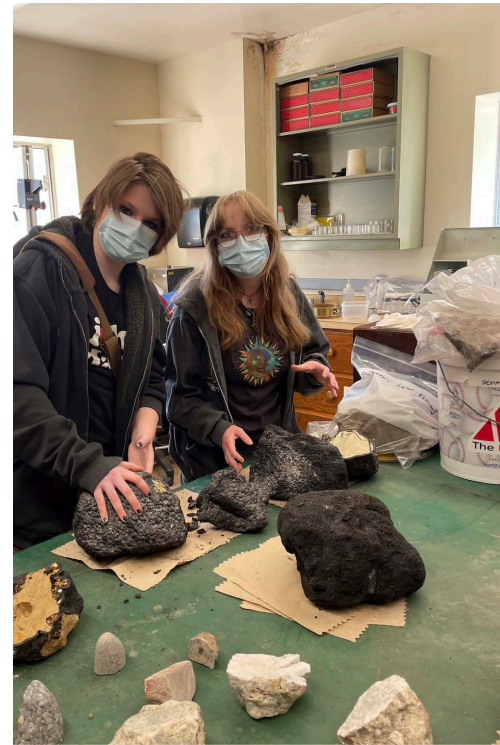
The start of this year we focused on getting back to learning and demonstrating the engineering process as we work on the URI curriculum. At the beginning of the year, we learned to use our teamwork skills by completing an activity that needed each group member to use their engineering skills to develop a bridge, tower, and zipline to support the highest number of “bears” possible. This was a good demonstration of the process engineers use when faced with a problem that needs to be solved. We also learned the importance of measurement, as we completed a paper airplane activity that had us evaluate lift and drag in the construction of airplane wings. We also had fun at the URI Bay Campus, where we were able to meet with students and professors to learn about the different aspects of marine life and systems that are focused on at the campus. Family Science Night is approaching and we are looking forward to our upcoming semester of SMILE activities, before we return to URI for our big challenge day in the spring!

CLUB UPDATES

ROGERS HIGH SCHOOL Newport

Elizabeth Letourneau, Brooke Anderson
By Rogers SMILE Club

This year started off with a fun engineering challenge for the Rogers Vikings! We had to design a container that would safely remove radioactive popcorn from the center of the city before it exploded. We had some great designs that removed the toxic materials, keeping the school safe from harm. In the weeks following our first meeting, we had some new recruits brought in by the SMILE veterans as we began to balance chemical equations and see how different concentrations of hydrogen peroxide can affect the reaction rate with starch, citric acid, and iodine. One of the highlights of our fall meetings was the trip to URI's Graduate School of Oceanography in Narragansett. We traveled all over the campus learning from scientists and college students about the different ways they are studying the ocean. Seeing the lava pillows and all the core samples taken from the ocean floor was pretty cool. One of the scientists showed us how she is studying the movement of the ocean plates under earth's crust using a giant chamber of corn syrup! The aquarium on campus was one of the favorite places to visit since we were allowed to pick up some sea stars and hermit crabs, and even had some dogfish sharks pop up to say hello. The last few activities we did were quite challenging, with building circuits and a small robot that was supposed to move on toothbrush bristles when a light is shined on it. It was fun to build, but difficult to make work! The last thing we did was to make wreaths using some of the greens and vines from the Zen Garden at our school. We learned some cool techniques for making the vines into a circle, and we learned the names of some evergreens, like cypress, Alaskan pine, and boxwood.



CLUB UPDATES

CENTRAL FALLS HIGH SCHOOL Central Falls

Charlie Fisher
By Central Falls SMILE Club

This has been a busy and exciting year for the Central Falls SMILE club! We started the year off with one of our favorite challenges: toxic popcorn. The students kicked off the year working as a team to solve a problem that they initially thought was impossible. We then spent some time flexing our chemistry muscles, performing hands-on labs to demonstrate the law of conservation of mass and rates of reaction. Finally, we have been using breadboards to learn about circuitry, and have been working on making some cool things.

We were also fortunate enough to go on a field trip to Norman Bird Sanctuary. There we went on a guided tour of the land, and learned about the geology of Rhode Island. We are looking forward to the rest of the year and all of the exciting topics we will get into!



SUMMER TEACHERS WORKSHOP August 2022

The SMILE Program's Professional Development Summer Workshop for teachers took place, in person, on August 17th, 2022 at the University of Rhode Island. Safety protocols were in place to keep teachers safe from Covid-19, including tables for three at least 6 ft. apart. At the August workshop, all teachers were given lists of field trips sponsored by Dr. Evan Preissers' NSF grant, and the Middle School teachers were given the date of October 19th for the field trip to the URI Graduate School of Oceanography sponsored by Dr. Rainer Lohman's NSF grant. Teachers were trained and provided materials for the Engineering curriculum theme. SMILE's Claudia Hodderson, Elementary Coordinator, Jo Ann Basel, Middle School Coordinator, Meghan Corneau, High School Coordinator, and Carol Englander worked with teachers through a series of fun hands-on science and math activities that covered a wide variety of engineering related topics. The elementary teachers learned how to develop teamwork, problem solving, communication, and fine motor skills using a Gummy worm and life saver, Scientific inquiry and graphing (skittles), Buoyancy, what makes a clay boat float or sink, Cartesian divers, Mechanical engineering, conservation of Energy and Newton's 3rd Law of Motion (peppermint racers), Introduction to mechanical and structural engineering (making a ski jump) and Aerospace engineering- making soaring satellites. The Middle School teachers learned to develop teamwork, problem solving, and communications through Teddy Bear Challenges. Making a teddy bear bridge and zip line, why air planes and flying machines need flaps, shock absorbers for Mars Landers, using DNA in forensics, building a DNA molecule, building a trebuchet, paper chromatography, propeller powered cars, Bioremediation of a sugar spill, and how to test for wind energy at home. The High School teachers learned about teamwork through a Toxic Popcorn group challenge, Determining what type of engineer you are, balancing chemical equations, moles in chemical equations, chemical engineering, the iodine clock reaction, and careers in chemical engineering. Teachers worked with and were given bins of materials to bring back to their clubs that were challenging, thought provoking, and fun.



WINTER TEACHER WORKSHOP January 2023

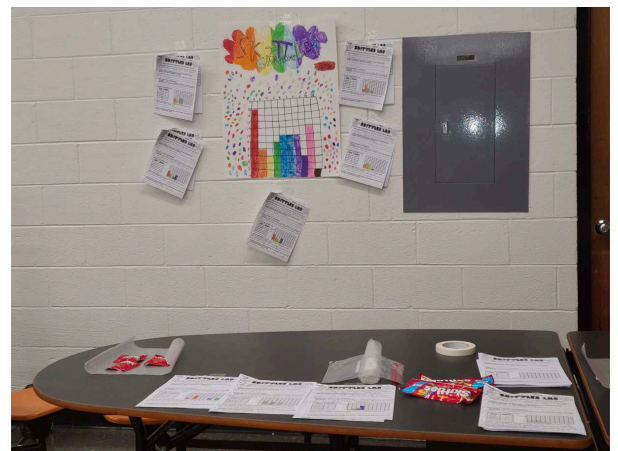
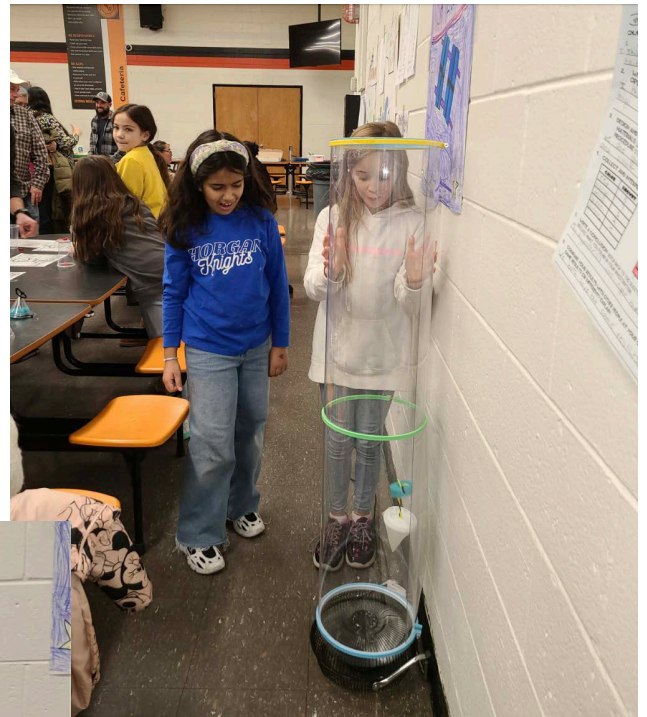
SMILE teachers from across Rhode Island came to the University of Rhode Island to attend the annual Teachers' Workshop on January 10th. It was packed with learning and planning as teachers prepared for the Elementary Ecology field day the Middle School Engineering Challenge, and the High School Engineering Challenge. The Elementary session theme was presented by SMILE Elementary Curriculum Coordinator and Ecology Field Day Co-coordinator Claudia Hoddersen and focused on the theme of Habitats. The teachers investigated food webs, hydroponics, biodomes/biotic vs. abiotic, Bird Beak adaptations, and owl pellet investigations. The Middle School session was presented by Jo Ann Basel, Middle School curriculum coordinator, Ecology Field Day Co-coordinator and Smile director. The teachers learned about circuits and making a paper greeting card, an introduction to motors with a homopolar motor, the engineering process by reverse engineering, wind energy, potential and kinetic energy, friction reduction hovercraft, and building a model racing car. The High School session was presented by Meghan Corneau, URI 4th year biomedical engineering student and High School curriculum coordinator, and SMILE executive director Carol Englander. Teachers learned about the physics and geometry around building suspension/truss bridges and towers, the Civil Engineering Field, Earthquakes, seismic data and how scientists use it, Tornadoes and Hurricane data, and how scientists use this data to make predictions for government uses such as budgeting. They also learned about Nanoparticles, UV radiation, skin cancer detection & prevention, nanotechnology & conducting a virtual lab on gel electrophoresis. Teachers investigated potential field trips to sites of plant and herbivore interactions as part of the Dr. Evan Preisser NSF grant of which SMILE is the Educational Outreach partner. They started to plan stewardship projects, and a possible Family Science Night In April. Teachers left with additional equipment to bring to their clubs and a sense of excitement about upcoming Annual events.



FAMILY SCIENCE NIGHT

In December the West Warwick SMILE Elementary, Middle and High school clubs participated in a district wide Family Science Night. SMILE students look forward to this community event that brings together students and their families, friends, teachers, school administrators, and community leaders for an evening of interactive science, technology, engineering, and math (STEM) activities. Family Science Night promotes community and education during this special evening including a potluck dinner and participation in science and math activities taught by SMILE students designed for the whole family to participate in, learn from, and enjoy. Five SMILE districts including Central Falls, Newport, South Kingstown, Westerly and Woonsocket will hold their Family Science Night in April.

Participants in Family Science Night are always impressed and proud of the accomplishment of their SMILE students. Many parents have expressed to SMILE staff their delight and surprise at seeing their child as a competent teacher as parents and siblings rotate through a series of stations. It is an evening where families are learners and begin to bond into a SMILE community and students present activities five or more times to their family and community members, impressing everyone with their enthusiasm for science and math and teaching, and building authentic confidence and self-esteem.



PARTNERSHIPS

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:

CENTRAL FALLS

Ella Risk Elementary School

Shena Tremblay
Laticia Biggerstaff

Calcutt Middle School

Molly Forte
Kelly Sierra

Central Falls High School

Charles Fisher

NEWPORT

Claiborne Pell Elementary School

Kevin Bolano
Jeannine Walsh

Thompson Middle School

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Rogers High School

Elizabeth Letourneau
Brooke Anderson

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Peacedale Elementary

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Coleman Elementary
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Citizens Elementary
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Sean McBride

Woonsocket High School
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West Warwick School Department

Woonsocket School Department

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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The SMILE Program

The Science and Math Investigative Learning Experiences (SMILE) Program is an enrichment program for educationally disadvantaged students in grades 4-12 in seven districts in Rhode Island. SMILE's goal is to provide group activities for these students in science, technology, engineering and math. Generous gifts by participating donors make this program possible. The SMILE newsletter is published three times a year. We encourage your comments and ideas. Please share this newsletter with others who might be interested in SMILE.