



Science and Math Investigative
Learning Experiences

Newsletter

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30 Years of Service *



**Elementary School
Ecology Day where
students got to
experience both
plant and animal
ecosystems on
URI's campus**

**Students built
and tested
submarines on
the URI campus
for the annual
High School
Engineering
Challenge**



HIGH SCHOOL ENGINEERING CHALLENGE

SMILE high school students from six RI districts came to URI for the yearly high school engineering challenge. They worked together in 16 teams total, split in two, each with different objectives. Group A was responsible for designing, building, and testing a submarine compartment with different insulations for cooling retention using an Infrared (IR) thermometer. Group B built a fan from thin aluminum attached to a toy dc motor with batteries and designed and built an on/off switch. The fan was used to blow cold air from a can filled with ice water into the submarine compartment. Steven Reiman, a climate engineer coordinator from Electric Boat, presented an excellent overview of the challenges of climate control in submarines to our students. Students also toured the Fascitelli Center for Advanced Engineering, the Center for Biotechnology and Life Science, and the Beaupre's Center for Chemical and Forensic Sciences.



HIGH SCHOOL ENGINEERING CHALLENGE



CLUB UPDATES

Coleman Elementary School Woonsocket

Emily Cartier, Danielle Granata
By Coleman SMILE Club

This year in SMILE, students in the Coleman SMILE club have participated in a variety of activities and learning opportunities. Students really enjoyed investigations in which they could use all five senses; AKA we love opportunities to learn, experiment, investigate, and eat! The best part of all is that the dedicated students in our SMILE program really show such an interest in learning about the science behind so many of our investigations. They often create illustrations of the investigations that we complete to hang in our SMILE room! Here were some of our favorite activities:



Ice Cream in a Bag

Students LOVED the opportunity to create and try their own ice cream. We enjoyed this experiment so much that we demonstrated the process and our learning at Family Science night! Our fourth and fifth grade scientists explained to families and school professionals throughout our district how ice cream can be made in a bag! It was a hit! Students and peers even discussed how they can do this experiment at home!

Other SMILE club favorites:

- Using Jelly Beans to create a Dichotomus Key
- Creating a food web and discussing the many possible food chains within an ecosystem
- Acting as structural engineers in order to create the strongest geodome (we had a geodome that could hold three books on top!)
- Testing the pH levels of a variety of liquids in order to determine if they were an acid or a base.

We are looking forward to participating in some field trips in which we can continue to study and learn about animals and their habitats around our own community. We are also looking forward to completing our end of year stewardship in which our students will impact our community and the environment in positive ways.

CLUB UPDATES

Globe Elementary School Woonsocket

Brittney Pyszynski, Mckenzie Brissette
By Globe SMILE Club

This school year we have experimented, discovered and created extraordinary things. A student favorite was "making ice cream." The student scientists were very impressed with themselves and how well it turned out. Another student favorite was the mystery bags. The student scientists used their inferencing skills to investigate and determine what was in each bag.



Students have come to wonderful realizations about themselves during this year's SMILE program. We have heard students say, "After today, I want to be a designer." That quote was directly after creating the tunnels with a marble. The SMILE students have truly collaborated together while investigating and discovering new passions of their own.



ECOLOGY FIELD DAY

SMILE hosted seven elementary SMILE Clubs from all over Rhode Island on Friday April 26th for its annual Ecology Day. Students visited four different habitats, FOREST, VERNAL POOL, POND, AND STREAM, on the URI campus to learn more about the environment. We were fortunate to have the USGS of Connecticut teach the students about the stream habitat. With their guidance, students measured and collected data related to stream health such as temperature, pH and oxygen levels. In addition, students were able to hear about real life STEM careers.

URI students taught lessons at the other three habitats. With booklets in hand, the elementary students made observations on lichen and light intensity, amphibians, and soil composition. They used scientific equipment to measure pH, dissolved oxygen, dissolved nitrates, air water and soil temperature related to these habitats, and made filtration units for the pond and used quadrants to study forest species diversity. By day's end, students saw much of the university, had lunch in Hope dining hall. and reported that not only did they love the day, but that they were more knowledgeable about the natural world!



ECOLOGY FIELD DAY



CLUB UPDATES

Horgan Elementary School West Warwick

Maria DePalma, Amy Horne

By Horgan SMILE Club

This has been another year filled with excitement and learning in our SMILE club. Since we got underway last fall, we have been able to investigate many different areas of scientific study, and work together in an environment of fun and friendship.

In the fall, we practiced leaf chromatography, breaking down leaves and revealing the hidden pigments within, that produce those fabulous fall colors. We worked as engineers, building geodomes, first with toothpicks and Dots candies. We let the candies dry out and strengthen for a week, then tested the strength of our structures by stacking books atop the domes. We also used much larger wooden dowels to build structures large enough to sit inside.

Students worked in teams to build marble runs on the front of our hallway locker banks, adjusting their structures to increase or decrease running times to predetermined time constraints. We used our senses to guess the contents of Mystery Bags, without peeking inside! Students raced to build the longest possible chains they could from a single sheet of paper. We stamped our fingerprints on the outside of balloons, then inflated them to enlarge the prints for better viewing of the various types and shapes.

As we ventured into spring, we started to learn about ecosystems. We learned about producers, consumers and decomposers. Students represented food webs by tossing a ball of yarn, and learned about the ebb and flow of resources available to deer in the wild by playing a game called "Oh deer!"

Our stewardship project this year will be to make Mason Bee Houses. These simple to make homes will provide a place for the tiny Mason bees to reproduce. They are very important pollinators and help flowers, plants, and crops to thrive in our environment.

Our winter Family Science Night was well-attended and a great success. Our students made fantastic teachers, displaying their knowledge and communicating their love of science and learning.

Now we are looking forward to our Ecology Day at the University of Rhode Island, where we will participate in a full day of science and university life, making us even more determined to "aim ourselves for college", as stated in our SMILE Pledge.

CLUB UPDATES

Calcutt Middle School Central Falls

Kate Tolman, Kelly Sierra
By Calcutt Middle SMILE Clubs

What a year it has been at Calcutt Middle School for SMILE! We kicked off the year with a field trip to the East Farm for apple picking! During this trip we were able to ride with Woonsocket and our students were able to mingle. They also learned the important lessons of food sustainability in the community. Students picked apples to bring home, and we even got some pears!

Our SMILE club also had the opportunity to visit the Botanical Gardens at Roger Williams. During this trip we were able to view an assortment of greenery that was grown and cared for within the greenhouses on site. Students worked collaboratively to complete a scavenger hunt where they located different assortments of plants that were described in the guided tour. Students were especially excited to view the flavor lab, where fresh herbs and vegetables are grown, and the carnivorous plants!

This winter/spring we have been busy continuing with the engineering activities and getting ready for our big events. We hosted a successful Family Science Night where the elementary, middle, and high school SMILE clubs in our district demonstrated engaging science and engineering activities. Families across the district and schools were able to learn from our SMILE students about the science and engineering behind each of the activities. It was a great night! We also began to study Maglev-trains in preparation for the SMILE Challenge Day. During the challenge day, students from all over the state worked together to create a crane and Maglev-train.

We will be ending our year with our stewardship project. We will be upcycling items to create fun and beautiful gifts of gratitude to give out during teacher appreciation. Students have put in their favorite DIY upcycling items on the list for this really rewarding community project.

Finally, we were also able to check out the Solar Eclipse using safety glasses. The students had a great time looking at the different phases of the eclipse.

It was a great year in SMILE!



CLUB UPDATES

Woonsocket Middle School at Hamlet & Villa Nova Woonsocket

Jenn Hardy, Michaela Gormley, Ian Chernasky, Michelle Morin
By Woonsocket Middle SMILE Clubs

It has been a phenomenal year for The Woonsocket Middle School SMILE club, with countless exciting field trips, fun activities and memorable experiences.

We started off the SMILE year with a field down to the University of Rhode Island's East Farm. While there, our SMILE students learned about the URI Master Gardener program, got to explore (and taste!) the various plants that can be grown in a garden, and were taught how apple orchards are run in a sustainable manner. To top it all off, the students were allowed to pick apples from the East Farm orchard and bring them home to their families.

Our district-wide SMILE Family Night was also a tremendous success with hundreds of Woonsocket Family members showing up to see what their children have been up to in the SMILE program. Family Night is unique in that it "puts the shoe on the other foot" - the SMILE students have to become the teacher, and teach the family members and other visiting faculty members the concepts they have learned this year in SMILE. Our SMILE students excelled, providing demonstrations and explaining complex topics to everyone from 6-year-old siblings to the superintendent of the Woonsocket School District, Dr. Mcgee!

In January, the URI Navy STEM Crew visited us at Woonsocket Middle School and brought with them a tricky boat-building challenge. Our SMILE students are not ones to back down from a competition, and immediately began competing with each other to see whose boat could hold the most weight with a very limited set of materials. Some boats excelled, holding everything thrown at them without taking on a single drop of water, others... not so much, but all of the students enjoyed the building, testing and iterating process of engineering.

Last, but certainly not least, was the big SMILE Challenge day at the University of Rhode Island. Many of our students were nervous and apprehensive about being at a large University being surrounded by unfamiliar people, but those fears quickly subsided once they began talking to their group members, creating friendships and working together to solve the challenge. In addition to the challenge itself, the WMS SMILE students got a taste of college life - quite literally. The students were given a tour of URI campus, were able to interact with and talk to college students, and of course, got to eat lunch and dinner at the URI dining hall. The challenge day is always exciting for our SMILE students!

Challenge day might be over, but the SMILE club is not done yet! With more field trips planned for the Spring, this is shaping up to be one of the most exciting and successful SMILE club seasons in recent memory.

As always, the success of the WMS SMILE program relies on our students and their families. Without them, it could not be what it is today. We thank all of our families for being involved in their child's education and invested in their future. We look forward to many more years of continued success in the WMS SMILE program.

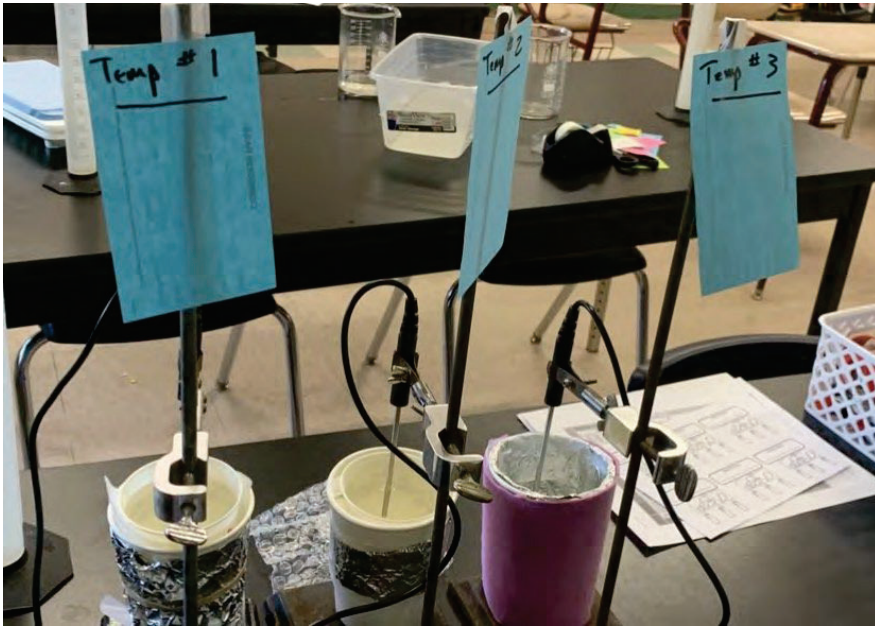


CLUB UPDATES

South Kingstown High School South Kingstown

Reed Fraser, Michael Lobdell
By South Kingstown HS SMILE Clubs

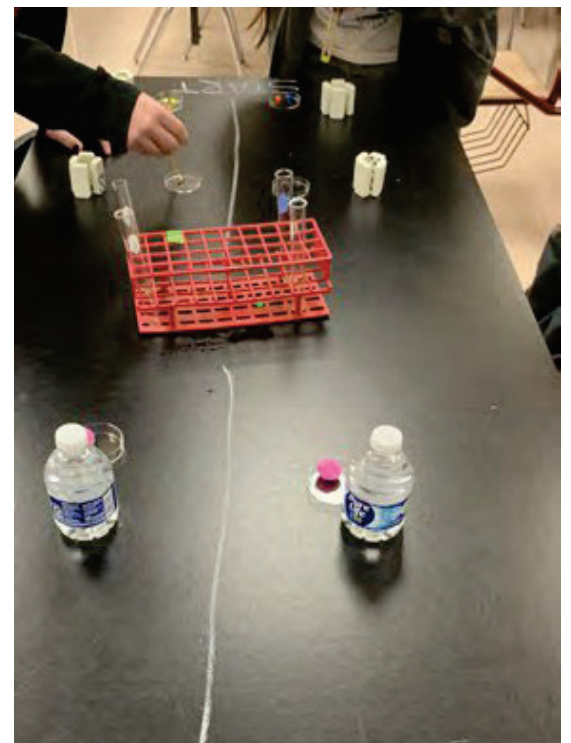
South Kingstown High School SMILE - The SKHS SMILE students have worked on activities throughout the year leading up to the culminating task during the Engineering Challenge Day. Students have learned about topics including heat transfer and insulation.



High School Engineering Challenge Day - The SMILE Engineering Challenge day was a great experience for our students. They designed and built a submarine cooling system. During the trip, students had the opportunity to see the lab spaces at URI. Our SMILE members mentioned that they enjoyed collaborating with students from other schools. They also mentioned that the challenge made them “think outside the box.”

Family Science Night - South Kingstown SMILE schools held the annual Family Science Night on Thursday, December 14th, 2023. The SKHS SMILE members displayed and explained the balloon powered car, cotton ball launcher, and smooth operator activities. For the smooth operator activity there was a competition set up of who could complete the obstacles the fastest. Students and families also had the opportunity to make wreaths.

What's next for SMILE? - South Kingstown High School SMILE members are working on their Stewardship Project.



CLUB UPDATES

Woonsocket High School Woonsocket

Bridgette Hernandez, Ethel Locke
By Woonsocket HS SMILE Clubs

SMILE is an after-school program where we learn about different scientific activities. We mainly focused on engineering. Two activities that stood out to me would be the balloon-powered car and the cotton ball launchers. For the balloon-powered car, each group was given four wheels, two regular straws, two wooden sticks, a jumbo straw, a balloon, a piece of cardboard, and a rubber band. With these materials, each group was assigned the task of creating a moving car. This activity stood out to me because it allowed us to work hands-on and engage with friends. For the cotton ball launchers, each group was given one roll of duct tape, a hole puncher, a pair of scissors, two rubber bands, a paper towel roll, a wooden stirrer, and two cotton balls. With these materials, each group was assigned the task of creating a slingshot-like launcher that could shoot cotton balls. This activity also stood out to me because it was something I had never done before, allowing me to experience something new. These activities taught me engineering and disciplinary skills, introducing me to new concepts such as potential and kinetic energies. Overall, these activities gave me the opportunity to interact with new people and learn new skills.

During URI Challenge Day this year, we worked in groups with other SMILE teams from around Rhode Island to demonstrate what we had learned about thermodynamics and insulation. To do this, we designed and created a model of a submarine and a cooling system. We used our cooling system to reduce the temperature within the submarine and recorded how well it retained its temperature once it cooled. Afterwards, we used the data we gathered to see which group's creation held its temperature the best. Overall, we enjoyed the trip and learned a lot about thermodynamics, including heat transfer and insulation. In addition, we fortified our teamwork and engineering skills.



JOB OPPORTUNITIES

Below is a link to the careers page of KVH. It will provide a list of job opportunities to anyone interested. KVH is a corporation located in Middletown Rhode Island. KVH is a corporation that builds Satellites for boats and recreational vehicles and a proud sponsor of the SMILE Program.

<https://www.kvh.com/about/careers/>

Below is a link to the careers page of Schneider Electric. It will provide a list of job opportunities to anyone interested. Schneider Electric is a French based company with reach in every continent. They develop technology for electricity distribution, offers energy and sustainability services, and is a proud sponsor of the SMILE Program.

<https://careers.se.com/global/jobs?page=1>

Below is a link to the careers page of Toray Plastics America. It will provide a list of job opportunities to anyone interested. Toray Plastics America is a corporation with headquarters in North Kingstown, Rhode Island. Toray Plastics America works to design materials that are fossil fuel-free, compostable, biodegradable, and/or recyclable. They provide materials that are used in every day life to preserve food, protect against the sun, and more. They are a proud sponsor of the SMILE Program.

<https://www.toraytpa.com/careers/>

Below is a link to the careers page of Arnold Lumber. It will provide a list of job opportunities to anyone interested. Arnold Lumber is a company located in West Kingston, Rhode Island. They have a full service lumber yard that provides building materials and masonry supplies, but on top of that also provide hardware, electrical, plumbing, cabinetry, and more home design features. They are a proud sponsor of the SMILE Program.

<https://arnoldlumber.com/employment/>

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:

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