SMILE Communities Participate in Family Science Nights

SMILE West Warwick and Woonsocket Family Science Nights provided the opportunity for families and community members to become familiar with watershed and forestry environmental science issues. These fun events provided an environment and structure where students and their families explored and talked about science. The event brought together students and their families, friends, teachers, school administrators, and community leaders for an evening of interactive activities and friendship. Each evening started with a potluck dinner where families get to greet old friends and make new ones.

The SMILE students engage their parents and family members as learners. Groups of parents and siblings rotate through the stations as the students present and teach hands-on activities. Because parents are rotating, by the end of the activity, students often have presented five or more times. For many students, this is their first experience at teaching, and by the end of the evening after many presentations to strangers they are definitely enjoying their teaching role, and have built up lots of confidence and self-esteem.

Parents are very proud of their child’s accomplishments. Many parents have expressed to SMILE staff their delight and surprise at seeing their child as a competent teacher. It is an evening where families begin to bond into a SMILE community and students impress everyone with their enthusiasm for science and math and teaching.

In each school district, SMILE staff presented College Awareness and Planning, including requirements and financial aid. This year, The SMILE Roll Call of Success, with photos of our SMILE high school and college graduates, and the colleges they attend, was popular.

Family Science Night in each community is characterized by warm hospitality, a sense of community, and a common purpose: to promote these children to continue to do well in school, stay in SMILE, and graduate from high school well prepared to enter college to pursue the career of their choice – and having the support of families helps this happen!

SMILE Receives Prestigious Award

2013 LIGHTS ON AFTERSCHOOL OUTSTANDING YOUTH PROGRAM AWARD

The Science and Math Investigative Learning Experiences SMILE Program has received the 2013 Lights on Afterschool Outstanding Youth Program Award presented by Rhode Island Afterschool Plus Alliance, an initiative of United Way of RI. This is the 20th year of The SMILE Program.
Healthy watersheds are important to protect our streams, rivers, lakes and ocean.

All investigations occurred close to the school, and students were encouraged to think about how the area is connected to the local bodies of water and the bigger watershed.

Where’s the Groundwater Activity:
Often hidden from view, students “show” what groundwater looks like and teach participants basic groundwater vocabulary.

Woonsocket Elementary School Students made interactive map of their school grounds using iPads. They put a red tape around certain areas in the map and made educational videos about each location.

West Warwick Elementary School students made several watershed and forestry board games.

Students show products that are flushable and dissolvable in the water treatment plant.
Woonsocket Elementary School

What’s Flushable? What Isn’t?

It all ends up in the ocean.

Employees from CH2M Hill brought microscopes and specimens of organisms used in water treatment plants.
FAMILY SCIENCE NIGHTS

Learning About Local Watersheds

Woonsocket High School Students made a model of a rain garden.

Watershed Models: It is a matter of gravity. Water runs downhill picking up sediment and pollutants as it flows. The runoff ends up in the local watershed.

West Warwick High school students present the results of their vegetation survey on the school grounds.

West Warwick Elementary students created a “rain storm” with a spray bottle to demonstrate how pollutants wash through the watershed.

Deering Middle School students present the results of their vegetation survey on the school grounds. They explained the specific characteristics of trees, bushes, shrubs, lichens, and moss, and the species found on the school grounds.

Land use, pollution and traffic patterns. Students observed how the land is being used and the potential impact on the watershed. Deering Middle School.

Students talk about their exploration of wildlife on the school grounds.
SMILE had another successful two-day Summer Professional Development workshop to kick off the year. From September through December, clubs will focus on **Watershed Forestry**. The focus is on the connections between students, their school, and town; they will make detailed observations on the impacts that their small area has on their immediate surroundings, wider community, watershed, and state. Students will investigate their school grounds and local watershed in the fall and early winter while preparing to develop and implement a Stewardship Project for the spring. The goal of this project will be to increase biodiversity and/or decrease stormwater runoff at their school or local community site.

At the workshop, teachers learned how to create a schematic base map of Roosevelt Hall. In their clubs, students will make these maps of their school grounds with as much detail as possible. Though many of the investigations occur close to the school, teachers will encourage students to think about how the area under investigation is connected to the local bodies of water and the bigger watershed. They are provided with a map of their school that shows the boundary of the survey and will perform an initial site survey where they mark down observations such as plantings, green spaces, impervious surfaces, down spouts, storm drains, erosion issues, etc. They will then add to their maps to include topography/water flow, land use, traffic patterns, and history. Students will eventually make a finalized map to showcase at their district-wide Family Science Nights. Students will also take dimensions of their schools to determine pervious and impervious surfaces and measure infiltration rates of different surfaces. Elementary students will investigate how pollution spreads and find out more about groundwater with fun and interactive activities. All clubs will visit a local body of water to study decomposition and collect water quality data. They will also brainstorm Stewardship Project ideas based on their investigations throughout the Fall. Examples that they are considering include rain gardens, log piles, butterfly gardens, tree plantings, green spaces, making paved areas more pervious, dog waste remediation, etc. The students will come up with a short proposal and budget for their project before they put their ideas into ACTION in the Spring. All clubs also got to go on a beginning of the year field trip to kick off this watershed theme.
SMILE leaders from across Rhode Island came to the University of Rhode Island to attend the annual Winter Teachers’ Workshop on December 5th. The SMILE family has grown to include Tolman High School in Pawtucket and a second Middle School club in Woonsocket. Our 38 SMILE teachers from six school districts have a wonderful level of enthusiasm and knowledge that generates good ideas, creativity, and exciting projects among their SMILE students. The collaborative efforts of the hardworking, dedicated SMILE teachers are a source of strength to The SMILE Program.

December Teachers’ Workshop

HIGH SCHOOL:
Facilitators: Carolyn Mason, Curriculum Specialist, and Lacey Feeley, Assistant Director of Programs
Theme: Biotechnology
Highlights: Activities allow students to learn more about biotechnology and bioengineering. David Vito, Assistant Professor of Biology/CCRI and Coordinator for the Amgen Biotechnology Experience, led a forensics lab to learn about agarose gel electrophoresis and DNA fingerprinting. In addition to learning about biotech, students will learn more about persistent chemicals in the environment. Dr. Rainer Lohmann and two graduate students, Erin Markham and Carrie McDonough, work at the URI Graduate School of Oceanography and study persistent chemicals. They presented two sampling techniques that each club is going to try. The samples will be analyzed and presented to the students at the Challenge Event in March.

MIDDLE SCHOOL:
Facilitator: Carol Englander, SMILE Director
Theme: Bridge Design and Construction
Highlights: Activities focused on the compression and tension forces that are a part of all bridges. Activities also include learning about earthquakes and earthquake-resistant bridges. Dr. George Tsiatis, Professor of Civil and Environmental Engineering, explained how earthquakes affect buildings and demonstrated, using a shake table, how metal frames simulating a multi-story building react to increasing frequencies and horizontal motion. In their clubs, students will construct a balsa bridge and bring it to the Challenge to test on the shake table. Teachers also planned for a field trip to see the major bridges in RI and Fall River, MA.

ELEMENTARY:
Facilitator: Gus Gomes, SMILE EOSA coordinator and Assistant Director
Theme: Abiotic and Biotic Factors that make up an Ecological Community
Highlights: Teachers participated in several activities that they will present to SMILE students in preparation for the EOSA weekend. We examined why our atmosphere is perfect for life with the “Goldilocks Principle” and “Mixing Ratios or Parts per Million” activities. Then we did biochemistry activities that showed the importance of pH, dissolved oxygen, nitrogen and other elements and compounds to living things in our environment.
We’ve been doing a lot of stuff in SMILE for the last three months. We measured around the school and we marked it on a map. We measured the length of the sidewalk and the street and we also measured all of the asphalt. The vegetation around our school needs a little help. Some of it is alive, some is dead and some is overgrown. We need to add some vegetation. The wildlife around Harris school is amazing. We found evidence of wasp nests, squirrel nests, and bird nests.

We also investigated the water flow at Harris School. We poured water on the ground to see which way it would flow. Some of the water flows toward the building instead of away. We took all of our data about Harris School’s surroundings and drew a huge map. Then we took red tape and put it around places on the map and we made videos about each place. Now when you place an iPad over the red box, you can see SMILE videos made by SMILE students. Cool!

We also went on the Blackstone River Explorer. We liked it because it was very interesting. There was very interesting wildlife and the history of the fish dieing and now they are coming back. It was a very interesting field trip.

CLUBS

Harris Elementary School
Heather Neil
Stephanie Roberts

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SMILE Newsletter and Report

Curtis Corner Middle School
Gina Haberlin
Jo Ann Basel

CLUBS

Crazy fun field trips!  Sydni
Unbelievably amazing brain fuel, popcorn…Iona
Realistic experiments like making floating objects…Kaitlin
Team building challenges are wicked awesome…Shy
Illuminating the ideas of science…Aidan
See and learn new things…Haylea

Cool kayak Pawcatuck Watershed trip…Jojo
Outstanding maps that we drew of our campus…Elissa
Radiant minds working together on problems…Matthew
New and fun things every day I walk through the door…Hannah
Everybody has lots of fun doing the activities…Emilia
Really fun experiments…Alyssa

Super exciting team activities…Hayden
Magnificent activities in SMILE…Madison
Interesting, fun things to learn and do…Sophia
Learning about watersheds—the fun way…Jessica
Exciting engineering challenges such as boat making…Anna

SMILE is all about learning science and math the exciting way…Emily
Knowledge to succeed…Lillian
This year’s SMILE club has gotten off to a great start! Having already prepared for family science night, and having been on a fieldtrip, things are going very well.

Our club has grown this semester, and members new and old are enjoying themselves so far. In October, our SMILE club paired with the South Kingstown Middle School SMILE club in a kayaking adventure on the Wood Pawcatuck River. This field trip allowed the two clubs to enjoy each other’s company as well as learn about the water shed and ecology of the river. The students enjoyed kayaking and getting to spend time with their friends being active and outdoors, it was a great experience for everyone!

Starting in November, we broke off into groups to prepare for family science night. Each group was given a different aspect of how our school effects the local watershed, and constructed a map detailing the impact. We found the information very interesting, and one group has proposed a solution to one of the problems of the current system. We are excited for the rest of the year, and especially cannot wait for the SMILE challenge weekend in March.

The Elementary SMILE group in West Warwick has had a exciting and busy year thus far. In September, our club drove to Central Falls to board the Blackstone River Explorer for a beautiful and informative trip down the Blackstone River. Our guide was very knowledgeable about the river and the history of the entire area. We learned about businesses past and present and their effects on the water. We saw swans, a huge heron, painted turtles, and a kingfisher! It was a perfect fall day for a tour!

All of our students’ hard work paid off with an extremely successful Family Science Night. We had a huge, hungry crowd and tables laden with delicious, home-made ethnic dishes and sweet treats. Our students wowed the crowd with professional-grade maps of our school, a very realistic, watershed model, and informative and creative games testing players’ knowledge of trees and forestry. We were very proud of their accomplishments.
Hi SMILE kid! So far in SMILE we have been learning all about watershed forestry. We have been doing a lot of experiments that we have never done before in our lives! We went to Roger Williams Botanical Gardens and saw all kinds of plants that we have never seen before. We learned how plants grow big if you take care of them, the water cycle, and how important it is to have permeable surfaces to prevent erosion and provide clean water.

**Why we love SMILE…**
...it teaches me more about science and measuring. That makes me smart and thinks about helping the environment. Sewers always have to be clean.
...SMILE I like the math that we do in the beginning when we come to class, and also I love the experiments that we did and I love to learn more science.

**Why I joined SMILE…**
...Also because last year my sister went to SMILE and it was fun, so I wanted to try it. I learned it will get me into a good college and that’s important to me!
...I joined SMILE because it is a science math program and I love science and math.
...I joined smile because I wanted to learn new skills with other people from different classes.

**My favorite experiment was…**
...When we cut an apple and found out the skin is how much clean water there is in the world.
...When we put liquid + solid together and made a gas. The vinegar exploded with the sugar, baking soda, flour and salt. It was the baking soda and the vinegar made the gas. WOW! I never saw this before.
...All of them because they were interesting to me.
I am most looking forward to...
...SMILE family night because I can be the teacher and show my parents the things I have learned since September.
...I am most looking forward to the camping trip and then I will go to college. I know that SMILE will help me learn enough knowledge so I will be prepared for college.

We went to Roger Williams Botanical Gardens and saw all kinds of plants that we have never seen before.
By Emily-Anne Andersen and Emily Wolfe

So far this year…
We have learned about watersheds by researching information and exploring our local environment. We have learned about how watersheds help us and where watersheds are located. Over a period of sessions, we have walked around our school taking measurements and marking things, such as vegetation, sewer drains, and slopes/hills on our maps. We have been preparing this information for family science night as well and will begin preparing soon for our next activities and the URI weekend challenge.

Roger Williams Botanical Garden…
While working on watersheds, we took a field trip with the high school SMILE to Roger Williams Botanical Garden. There were different species of plants and trees displayed for us to tour. There was also a small pond full of fish. We were able to stay for only a short period of time, but that was all we needed to enjoy the garden inside!

Family Science Night Preparation…
In order to get ready for this big event everyone is working in specific groups. There are 5 groups in all. Every group must prepare a presentation for their topic. When family science night comes each group will present a board with information and will explain their topic. The five groups are focused on watersheds, vegetation, the school map, land use, pollution and traffic patterns, and local animal inhabitants. All five groups are based upon our school, John F. Deering Middle School.

URI Weekend Challenge…
Every member from all the middle school SMILEs in Rhode Island go to URI (University of Rhode Island) to do a challenge. Last year, we learned to build wind turbines and how they create electricity. We created our own model turbines and tested the power they gave off. This year, we don’t know what we are doing but we hope to have as much fun as we did last year.
Amgen Foundation
Amgen International Network
Amgen Biotech Experience
Amica
Connecting For Children and Families
Eaton Aerospace Foundation
Graphic Expressions
URI Graduate Students Association

Lloyd G. Balfour Foundation, Bank of America, N.A Trustee
NOAA B-Wet Program

North Kingstown 21st Century Community Learning Center
Pawtucket COZ-21st Century

Ramsey McCluskey Foundation
Schneider Electric
Steere Engineering
Toray Plastics, America, Inc
University of Rhode Island
URI Transportation Center
YMCA of Greater Providence

Central Falls School Department
North Kingstown School Department
South Kingstown School Department
Pawtucket School Department
West Warwick School Department
Woonsocket School Department

SMILE Newsletter

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SMILE (Science and Math Investigative Learning Experiences) is an enrichment program for educationally disadvantaged students in grades 4-12 in four Rhode Island communities. SMILE’s goal is to provide group activities for these students in math, science and computers. Generous gifts by participating donors make this program possible. The SMILE newsletter is published four times a year. We encourage your comments and ideas. Please share this newsletter with others who might be interested in SMILE.
Weekly SMILE Club Meetings
Scientific and Career Exploration Field trips

Family Science Nights
November-December 2013

Special Annual Events

High School
Challenge Weekend
March 21-22, 2014
URI Kingston Campus

Middle School
Engineering Challenge Weekend
May 2-3, 2014
URI Kingston Campus

Elementary School
Outdoor Science Adventure
April 11-13, 2014
URI Alton Jones Campus

Teachers’ Professional Development Workshops

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