



BEF Classroom Innovation Grant Awards NOVEMBER 2009

613. **The STARS Guard**

Recipient: Pat Carley
School: District Motor Development Team
Award: \$1,000

Grant funding will give special needs students attending middle and high school throughout the school district, the opportunity to participate in Winterguard. Winterguard teaches dance, movement skills, performance skills, and the appreciation of Winterguard as an art form. Winterguard uses flag poles, colorful flags, music, dance instruction, and choreography to tell a story. Students will perform at major color guard venues in exhibition and at community events.

614. **5th Grade College Planning**

Recipient: Chris Sonnichsen
School: Chehalem Elementary
Award: \$945

Students who are given the opportunity to visit college campuses make the connection between their own education and future possibilities. College becomes an accessible reality and high school performance and completion a necessity. Grant funds will provide all 5th grade students a day of touring a local college campus. They will meet with teachers, administrators and students, and will visit lecture halls, dorm rooms, the library and gym, etc. The goal is to enlarge the worldview of students, to encourage them to set self-goals and to understand the value of what an education means to their future.

615. **Art Exploration: Perception and New Ways of Thinking**

Recipient: Michael Humphreys and Molly Anderson
School: William Walker Elementary
Award: \$1,000

Two hundred and fifty students will participate in an evening of art. Students will be introduced to new ways of utilizing their brains through exploration and instruction in five artistic media; pencil, colored pencil, charcoal, ink and pastels. Students will have the opportunity to produce art in each media during the evening. Each of these skills will provide new ways of processing information and lead to the development of enhanced thinking skills.

616. **Those Who Came Before Us**

Recipient: Vince Jones
School: Health Science School
Award: \$1,000

This ten-week project is a major investigation of the "First Americans". Students will study multiple theories regarding the migration of the first native people of America; where they may have originated, and how they arrived here. The project includes exploration of other ancient people and findings such as Neanderthals, Pre-Clovis, Clovis points, a frozen baby mammoth named "Lucy", the Monte Verde site in Chile and locally, the Paisley Cave coprolites. In conjunction with these archeological discoveries, students will learn about the scientific method of carbon dating.

617. **Social Skills in the Community**

Recipient: Cristina Chavez
School: Five Oaks Middle
Award: \$701

Special Education students will be given the opportunity to apply classroom skills out in the community. Students will practice appropriate manners and behavior dining out, how to order a meal, and self-advocacy skills. In addition students will use public transportation, using classroom lessons in mass transit protocol and public safety.

618. **Social Studies and Language Arts Intervention**

Recipient: Beth Johnson, Kacey Farrens, Marsha Setzer, Chris Martin, Sue Long, Mike Dellerba, Martina Pederson, Amy Andruschat and Audra Defrance
School: Westview High
Award: \$560

The 11th and 12th grade intervention classes are created with teachers and counselors teaming together to address both the academic and social needs of students who have a history of academic failure. The goal of the class is to provide a venue for students to recover lost credit needed for graduation, acquire new skills and knowledge that will help them in all academic areas, and create a plan of action toward achieving post high school goals.

619. **Leadership in Action**

Recipient: Liv Cruse
School: Highland Park Middle
Award: \$1,000

This green project will involve students in hands-on art, technology, marketing, financial, and sales promotion. As students rotate through art and/or technology courses they will have the opportunity to submit an art piece for consideration as the featured piece that will be reproduced and screened onto canvas grocery bags. The art on the bags will change each Trimester. In Leadership, students will create advertising, sell the bags, and do financial tracking. This project will be an on-going fund-raiser for Encore classes.

620. **Earn Yourself a Life**

Recipient: Bridget O'Connor
School: Aloha High
Award: \$258

Grant funds will be used to create real-life independent living situations in the special education classroom. Each student will earn a living by meeting the requirements that would be expected in a typical work environment. Checking accounts will be opened for each student, who will be paid by direct deposit. Students will pay monthly bills, keep track of their finances and reconcile bank statements. Math, communication, budgeting, work ethics and social flexibility are skills that will be honed in the classroom in preparation for students to enter independent living after graduation.

621. **Science Inquiry Outreach**

Recipient: Joel Laney and Bernadette Buxton
School: School of Science and Technology
Award: \$650

Funding provided through the Building STEAM 4 All Program

Students will research and design a project eligible to participate in the Intel 2010 Science and Engineering Fair. Students will collaborate with professional scientists. The projects will involve research, experimentation, data collection, analysis and application of data. Students will present their results to community professionals. The long term goal is to increase participation at the state fair which provides awards and scholarship opportunities for young scientists.

622. **Classroom Engineering**

Recipient: Brad Silva
School: Errol Hassell Elementary
Award: \$950

Funding provided through the Building STEAM 4 All Program

The engineering profession will be introduced to fifth grade students by parent volunteers. Lessons will explain the relationship between science, engineering and technology. Lessons on basic engineering principles, methodology, and a sample of engineering disciplines will be the precursor to a hands-on project. Students will form teams to assemble the project, teaching the importance of planning, communication, experimentation and general teamwork.

623. **Experience Science!**

Recipient: Lori Laws
School: McKay Elementary
Award: \$950

Funding provided through the Building STEAM 4 All Program

This project will help fill the gaps in science knowledge and experience for English Language Learners (ELL). Funding will enable more of these students experience hands-on science that will build their background knowledge and spark their interest in science. Visits will include OMSI, Bonneville Dam, Tryon Creek State Park, Beaverton Science Intensive Middle School, the Oregon First Robotics Competition and a class at Oregon Zoo.

624. **Green Roof Project**

Recipient: Diana Baker, Jacob Small, Bradford Hill, Caitlyn Anderson
School: Southridge High
Award: \$1,000

Funding provided through the Building STEAM 4 All Program

This student led project is to design and install a green roof on campus. As an environmental science project it will ultimately provide students and teachers a state-of-the-art green roof as an outdoor classroom, where science and math classes can study technology, biology, physics and runoff chemistry first-hand. The roof will be instrumented to measure key variables including water retention, heat transmission, and ambient temperature. Data collected by students will be analyzed and used in science, engineering and math classes. Students can also study two urban problems associated with climate change: urban heat conditions and storm water runoff conditions.

625. **Wind Generator**

Recipient: Rosy Gupta
School: Aloha High
Award: \$1,000

Funding provided through the Building STEAM 4 All Program

The 21st century is the century of technological advances in alternative energy. With sky rocketing energy prices, this is the time to come up with inexpensive alternative sources of energy. It is important to educate our youth to think independently and solve real-life physical scientific problems using innovative ideas and hands-on projects. This project will help our students as well as our community. Students will learn Faraday's law of electromagnetic induction, and apply the law to a practical application of designing and building a wind generator. If the wind generators that students build are able to produce 600 to 1000 watts of wind power, this renewable energy can be used in the classroom and/or homes.

626. **Sandy River Delta Expedition**

Recipient: Anne Rybak
School: Health Science School
Award: \$970

Funding provided through the Building STEAM 4 All Program

Leonardo da Vinci noted the painter was uniquely qualified to probe nature's secrets due in part to his keen powers of observation. This tie between the arts and sciences will be reinforced when students attend a fieldwork session through Metro Regional Parks to the Sandy River Delta. Students will gain hands-on experience detailing their observations and sketching the local river ecosystems. They will work on producing a "Sandy River Delta Pocket Field Guide". Each student will produce a watercolor painting and detail facts about a chosen animal. The pages will be combined to form the field guide.

627. **Mousetrap Cars**

Recipient: Gretchen Humphrey, Tom Steiwer, Paul Chamberlain
School: Hiteon Elementary
Award: \$826

Funding provided through the Building STEAM 4 All Program

In conjunction with the Matter and Energy unit, 5th grade students will construct Mousetrap cars to better understand potential and kinetic energy, transfer of energy and design technology. Students will then design an inquiry project using

their car, changing one variable to affect an outcome such as distance the car traveled, or time spent to travel a fixed distance. Students' results will be displayed on posters with their questions, background, materials and procedure, results and analysis. Students will include a data table as well as a graph of their results.

628. On-Site Outdoor School Experience

Recipient: Robin Schroeder, Morgan Mulkey

School: Whitford Middle

Award: \$1,000

Funding provided through the Building STEAM 4 All Program

Building on a week long on-site outdoor education adventure for all 6th graders, that was created last year, this project will offer students an invaluable learning opportunity. Central to the experience is the use of the outdoors as a classroom while providing exciting hands-on projects. A nearby wildlife refuge will be used to enhance the project. Learning stations will be set up on-campus and at the adjacent refuge to engage students in a variety of hands-on lab activities. Participation in the labs will unlock student understanding of the concepts learned in the classroom.

629. Going Solar: Sprint to the Finish

Recipient: Tiffany Tran-Parta, Susan Duncan, Amber Evans

School: Meadow Park Middle

Award: \$1,000

Funding provided through the Building STEAM 4 All Program

Students will have the opportunity to design, build, and test a solar car in a competition that integrates the new science standards of engineering, math and alternative energy. Seventh graders will use the engineering design process to create and test a solar car prototype in teams for a school wide competition. They will learn to work cooperatively to problem solve and evaluate the constraints and tradeoffs of their design decisions. Students will learn and apply science concepts including: forces and motion, friction, gear ratios, aerodynamics features, efficient axles and chassis. The cars will be powered by solar panels with a battery backup. Students will mathematically evaluate the performance and efficiencies of their designs. They will create a booklet to document and present their design to potential customers.

630. Ecosystems/Tidepools

Recipient: Craig Jensen

School: Cooper Mountain Elementary

Award: \$1,000

Funding provided through the Building STEAM 4 All Program

The focus of this project is educating students about the tide pool animals along the Oregon coastline, their ecosystems, adaptations caused by environment and the fragility of this environment in which they live. This project will help students appreciate the fact that subtle changes in an environment, such as tide pools, will have long-range effects on humans. Classroom learning will include research reports, mapping of the ocean currents and the ocean's importance to our planet. The project will culminate with a field trip to the Marine Hatfield Science Center in Newport. This includes a hands-on science lab and a trip to Marine Otter Rock Gardens to identify and observe tide pool animals in their natural environment.

631. Hands-on Engineering

Recipient: Ashley Marshall

School: Aloha-Huber Park

Award: \$1,000

Funding provided through the Building STEAM 4 All Program

In order to bring Engineering to life for all students this project will make it fun, engaging and interactive. Many careers in the field of science are engineering, and these hands-on activities will help prepare students for these careers. Engineering design kits will include LEGO blocks, motors, axels, wheels and other components that students will use to build vehicles. They will design, test and construct prototypes for a vehicle that is able to climb the steepest grade possible. This highly engaging, hands-on unit will not only academically prepare students for engineering, but will also instill enthusiasm in them when they see their designs come to life.

632. Opal Creek Ancient Forest Overnight

Recipient: Karen Harger, Angela Baker, Hayley Kearl, Celeste Darling

School: Vose Elementary

Award: \$1,000

Funding provided through the Mike Osborne Memorial Award Fund

Students learn science through the scientific process and experiential learning, and the best way to learn science is to be immersed in it. Due to economic and cultural backgrounds many students do not get the hands-on experiences of going to forest habitats. Grant funds will be used to provide students with an overnight trip to the Opal Creek Ancient Forest Center. There, students will solidify their academic knowledge. Students will explore sustainability, ecology, watersheds, astronomy, and geology through hikes, observations and journaling. They will present a science fair project based on their experience.

613. **Scientific Terrific!**

Recipient: Cathy Leverette

School: McKay Elementary

Award: \$990

Funding provided through the Dave Gettling Technology Fund

Research increasingly shows that students' interest in science, especially for girls, reaches a make-or-break point in 5th grade. Creating enthusiasm for science and fostering scientific thinking are the goals of this program. In this pilot project, students will plan their own science inquiries, follow project guidelines, reflect on their learning, use engaging tools and technology, and create multi-media presentations. The goal of the project, for TAG (Talented and Gifted), and high achieving students, especially girls, is to create enthusiasm and engagement in the study of science beyond elementary school.

614. **Geocache Adventures**

Recipient: Amy Corris

School: Hazeldale Elementary

Award: \$594

Funding provided through the Dave Gettling Technology Fund

Technology is an integral and growing part of daily living in the 21st Century. This project supports the use of technology through the use of global positioning system (GPS) receivers, and a GPS based activity called geocaching. Geocaching is a high-tech treasure hunting game played throughout the world. Students will locate hidden containers called geocaches, using GPS, and share their experiences online. This activity provides hands-on learning in the areas of math, geography, science and logic, and encourages engagement in authentic, collaborative learning process.

615. **Phenom – Desktop Scanning Electron Microscope**

Recipient: Mike Blok

School: Beaverton High

Award: \$1,000

Funding provided through the Dave Gettling Technology Fund

The world of nanotechnology is about to be opened! The Phenom is a high-powered scanning electron microscope tool that can magnify images up to 20,000 times. Things like pollen, insect parts, sugar crystals, thread, hair, bolts, etc., come alive as small detail becomes visible. Students will have a hands-on experience with a variety of samples from the world around us. Each student will be able to take away digitally captured images of samples they have chosen and manipulated with a high tech instrument that is as easy to use as a digital camera. The project will involve after-school time for small groups of students who will get exposure and instruction with the Phenom. Students will also be invited to participate in an open house in the Nanotechnology Center at Portland State University, where they will be able to view more powerful scanning electron microscopes in use and reinforce the amazement with nanotechnology in action.

616. **Engineering Alternative Energy Solutions**

Recipient: Toni West

School: Meadow Park Middle

Award: \$1,000

Funding provided through the Dave Gettling Technology Fund

During this engineering project, students will be exposed to and fostered in engineering principles by producing solar, wind, hydrogen, or water energy production devices of their choosing. Given basic components, they will design and build a working turbine or car. Students will then determine the amount of energy produced from their device and determine how many of their devices would be needed to replace its fossil fuel counterpart. Students will also compute changes in carbon dioxide production if their device was used instead of the fossil fuel counterpart.

617. **Hands-on Science Presentations**

Recipient: Emily Lee

School: Raleigh Hills K-8

Award: \$1,000

Funding provided through the Building STEAM 4 All Program

It can be difficult for teachers to teach everything necessary throughout the year. Field trips are very valuable, but instructional time is lost going to and from the site location. Grant funds will be used to bring hands-on science presentations to the school throughout the school year. Rather than spending valuable learning time sitting on a bus, the learning experiences will come to the students. OMSI and Audubon Society of Portland will come with interactive presentations such as Bug Me!, Befriend a Bird of Prey and Amphibians and Reptiles.

618. **Westview INK (Wink) Literary Magazine**

Recipient: James Duncan, Leah Abraham, David Kim, Lindsay Slater

School: Westview High

Award: \$1,000

The purpose of the literary magazine is to showcase the literary and artistic talent of high school students in need of some place for their creativity to shine. The magazine will include all forms of writing and art, from painting to poetry to photography. Students, who are passionate for the cause, will help maintain a magazine with an energetic, witty and enlightening tone. The goal of the literary magazine is to develop a community of creativity that all students can enjoy.

619. **Along the Cascade Trail**

Recipient: Helen Lovgren

School: Aloha High

Award: \$875

In this project 35 English Language Learners (ELL) will be involved in a partnership and volunteer project with the Oregon Zoo. Under the direction of the Oregon Zoo Education Department staff and the ELL teachers, this project will provide students with a meaningful, relevant learning opportunity. Students will be working as volunteers in the Cascade Trail exhibit at the zoo. In preparation students will research the animals of the Pacific Northwest. The Oregon Zoo staff will train the students as volunteers working at the various Discovery carts. The students will disseminate information about the animals to zoo visitors, primarily elementary students. They will be encouraged to use both English and their first languages, utilizing their bilingual skills in a work setting.

620. **Publish It!**

Recipient: Alysoun Lowe, Susan Moshofsky, Alyson Miller

School: International School of Beaverton

Award: \$872

Publish It! will be the culmination of a unit focusing on point of view. Students will experiment with the concept in their own writing by first collaborating in small groups to create a theme for their mini-novel. Next they will create their own chapter told from their character's point of view, adding their writing to their group's chapters to create a novel. Upon completion, the manuscript will be sent to the publisher to create a hardcover book. Throughout this project students will be immersed in writing and learning about how to prepare writing for professional publication.

621. **Author? Me!**

Recipient: Kristen Dobie

School: Springville K-8

Award: \$425

Inside every student there is an author, editor, scientist, publisher and illustrator. This project is intended to help students who are English Language Learners (ELL) recognize these skills in themselves, while improving their reading and writing in English. Through this project, all of the students, grades 1st through 5th who receive services for English language development, will be able to publish their own hard-cover story based on their research of a science topic. They will brainstorm, research, write, edit, peer edit, and revise their stories before publishing their final drafts. Students will be able to keep their books, which will be published through an online book publishing company.

622. **Greening Our Classrooms: A Documentary**

Recipient: Jonathan Stoner
School: Beaverton High
Award: \$1,000

Greening our Classrooms will be a documentary series that will be developed by students to highlight environment-friendly practices and demonstrate how schools can take advantage of the procedures. Students will form teams to report about green projects funded by federal stimulus money, suggestions from the Sustainability Committee and other innovations. Each team will write a script, film and edit a six-minute segment. *Greening our Classrooms* is an opportunity for students to apply science knowledge with communication abilities and broadcast experience telling an informative story. Segments will be combined to create a 20-minute documentary. The series will be available online and on cable television.

With thanks to our generous donors, including the Dave Gettling Technology Fund, the Mike Osborne Memorial Award Fund, and Building STEAM 4 All (supported with donations from Spirit Mountain Community Fund, Genentech, Beaverton Rotary and Boyd Applegarth Memorial Fund), Beaverton Education Foundation was able to award \$26,566, funding 30 classroom projects.

BEF Classroom Innovation Grants awarded to schools throughout the Southridge High School feeder system: Southridge High, Highland Park Middle, and Cooper Mountain, Hiteon, and McKay Elementary Schools were partially supported by a gift from the Helming Family Foundation.