Foundation Name	Project Title	Project Abstract
The Education Foundation of Alachua County	**Physics of the Future: A World with Superpowers**	The *Physics of the Future: A World with Superpowers* program is designed to infuse the students with skills they will need to be proficient in the 21st Century. The participants will design, create and test various automatons. The junior scientists will construct robotic suits that will be designed, operated and tested using the scientific method and basic algebraic reasoning. The projects are all student driven in that they are only limited by their imagination as they test their hypotheses in the real world and make adjustments like real scientists and engineers. The participants in the program will work closely with the teacher in the process to conduct an experiment that tests the mechanics of the various cybernetic designs they are studying. The students after the experimentation will conduct all the mathematics behind the experiment and present their findings in a digital presentation to the class with their results.
The Education Foundation of Alachua County	**Freshwater Ecosystems: Living Together**	The *Freshwater Ecosystems: Living Together* project will run parallel with the Alachua County Public Schools' curriculum guide for 7th grade Life Science. Students will use this project as an extension of their study on ecosystems and interdependence. Students will design and build the freshwater habitat. Our observations will include animal behavior, population counts, water quality, and temperature/humidity data. In addition to recorded observations and questions that arise as a result, students will be able to speak with a specialist in the field of ecology. Students will investigate a question/problem of their choice as it relates to the observations made in class. Their reports will be printed as posters to be displayed throughout our campus.
The Education Foundation of Alachua County	**Propagating Nematodes Through Plant Tissue Culture**	Nematodes are microscopic size worm-like organisms and a significant problem for crop yields. Historically, methods to control nematode populations were environmentally harmful. A local company developed a method to propagate and disperse the natural parasite of nematodes onto crops, reducing nematode populations and crop destruction. Many methods are employed to propagate nematodes for quality control testing. One method uses roots of plants grown in culture to propagate nematodes. Students have been invited to contribute to the research and develop protocol for nematode production through plant tissue culture. Objectives include: 1) Students will learn and practice methods currently employed to propagate a few species of nematodes on a few species of plants; 2) Students will research and develop protocol for propagating new crops through plant tissue (cotton and soybean); 3) Students will develop methods to propagate different species of nematodes on various crops. Skills required include: sterile technique for sterilizing and propagating seeds and parent nematodes for transfer onto established cultures; sub culturing; gathering and analyzing data; keeping accurate records; presentations with industry representatives.
Baker County Education Foundation	**Expanding Horticulture Education through Hydroponics Practice**	The goal of this project is to increase the education levels of 1st grade students in science and math (integrated) through a hydroponic project (growing healthy food choices in soil-less areas). Students at Macclenny Elementary are in need of healthy food choice education and will learn ways to develop their own healthy food choices through soil-less fruit and vegetable production. Students will develop a general understanding of hydroponics including the integrated science and math concepts used to solve food production problems.
Bay Education Foundation	**STEM Institute**	A minimum of twenty juniors and seniors from Bay County and surrounding counties will work directly with engineers from the Naval Support Activity facility on Panama City Beach, Florida, to design and program VEX robots. This is a career-focused endeavor with an emphasis on understanding the nature of technological design, incorporating different design factors, evaluating designed solutions, and working in teams. This workshop will be an expansion of the summer program currently offered by FSU's STEM Institute.
Bradford County Education Foundation	**Bradford County IQWST Program**	Implementation of the Investigating and Questioning our World through Science and Technology (IQWST) program is an inquiry-based program that gives the students an opportunity to question the world around them. Sessions will be offered that will allow for hands on experimentation, peer collaboration, debate, critical thinking activities and exploring relevant text. IQWST teachers will also be involved in regular in-service training activities in an on-going effort to constantly improve the program. All of these activities will be geared toward insuring that Bradford County students are "college ready."
Broward Education Foundation	**Growing STEM Roots at SLMS**	This project is important because it will develop our students into global stewards while providing them with real-world hands-on experiences. Students will research, assess a garden environment, design and plant a school vegetable garden with a student-built irrigation system that will be maintained by 7th grade students. Students will eventually sell their crops in innovative ways at the school store to parents and students for "dolphin money." This project ties directly into our school theme and becomes an extension of topics and projects already covered in the STEM curriculum. It is important for students to learn about healthy eating habits including vegetable consumption, nutrition and sustainability from a young age in order to become healthier adults. This is a great opportunity for students to work directly with local community partners and have extended learning opportunities outside of the classroom, which aligns with the college and career readiness component of the Common Core Standards.
Broward Education Foundation	**Remotely Operated Vehicle (ROV), Exploring the Ocean with Technology**	This ROV project will teach students to be creative, inventive, and innovative. Students will learn engineering and science concepts with a marine engineering focus by designing and building an underwater Remotely Operated Vehicle (ROV) while learning teamwork and technical applications. They will have to take the knowledge that they learn through the lessons to design ROVs that will be deployed in missions with specific goals such as sampling biological organisms underwater or exploring environments and ship wrecks. This will also allow students to become innovative along with understanding the various applications of ROV technology to marine research.
Broward Education Foundation	**A Field Guide to Boulevard Heights Elementary School's Plants and Trees**	This project promotes the importance of environmental stewardship to all students at Boulevard Heights Elementary School (BHES) which is a designated National Wildlife Habitat. The students will create field guides to plant and trees growing throughout the schoolyard habitat. The students will use technology (word processing, digital photography, laptops, tablets, and a website) to record and manage information gathered. The students will create videos to upload to the project's website. They will create maps, illustrations, charts and graphs, to be included in their field guides. Copies of the Students' field guides will be available to all teachers and students at BHES to promote the exploration of schoolyard habitats and inspire the next generation of environmental stewards.
Broward Education Foundation	**Programming in the Work Place… Dolphins Edition**	Students interested in computer programming careers but in need of guidance and support will interact with technology staff from the Miami Dolphins Organization. Students will be provided programming instruction by staff but also engage in self-directed project-based learning between meetings with staff. Interest in STEM courses, majors, and careers will be assessed by the number and percent of project participants who take and pass Industry Certification exams at the conclusion of the project.
Charlotte Local Education Foundation	**STEM Challenge**	The students will explore different careers and STEM technologies by programming robots and using iPads to write books and make movies. By expanding the Lego Mindstorms project more students will have the opportunity to learn robotics, computer programming, and computer coding. The iPad mini's will allow expansion and exploration with 21st century skills using the Mac platform to create music and sound engineering, movie and film production, and documentation of research skills.
Clay County Education Foundation	**Design, Develop and Execute Magic using Engineering and Technology**	Students will use 3-D computer programs, a 3-D printer and a digitizer to produce and clone necessary parts as needed to produce a magic show. Objects will be divided and made to disappear and shapes shifted. The goal is to use materials technology, computer science, electronics, fabrication, and robotics in developing this show and to be able to demonstrate how it was accomplished by using the similarly appearing objects in different colors. Teamwork, collaboration, and corroboration in groups of three are stressed. A field trip to Universal Studios for a guided tour of facilities for direct comparison of STEM related technologies has been arranged. Interaction with engineers from the Haskell Corporation, Naval Facilities Engineering Command, The University of North Florida, Integrated Construction, Jacksonville Electric Authority and Boeing using direct contact as well as phone, email and social media is expected.
Champions for Learning	**Parkside Elementary Math Business Academy**	Students will create, operate and evaluate the performance of a school-based business using mathematical applications aligned with curriculum standards in grades three, four and five.

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Columbia Public Schools Foundation	**First Book 2013-2014**	The students will learn receiving, shipping, inventory management, material handling and UPS World Ship by completing this project. The goal is not to just provide the students with a hands on learning environment but to also help fight the literacy problem in the United State by partnering with First Book.
Escambia County Public Schools Foundation	**Lettuce Eat! II: Building and Maintaining an Aquaponics System**	The goal of this project is to engage and excite students about the STEM fields by immersing students in the STEM subjects through hands-on experiences. This project is important because it will incorporate all parts of STEM: Science by growing fish and plants; Technology through the use of meters and equipment to monitor different factors such as dissolved oxygen, temperature, and pH; Engineering by designing and building the aquaponics system including the pumps and plumbing system; Mathematics through data analysis, calculating food to fish ratio, and determining economic possibilities. This project will also stimulate students' interest in STEM subjects, which will motivate them to explore STEM careers in the future. Mr. Bauer and Mr. O'Connor will use assessment tools such as Pre/Post tests, research papers, informal field assessments, experimental research and data collection, teaching elementary students, and the development of a mock business plan to assess students' comprehension of and interest in the STEM concepts involved in the project.
Escambia County Public Schools Foundation	**Career Preparation in High Definition: Professional Video Evaluation and Multimedia Training with an Industry Partner**	Through this project, students will be exposed to a variety of physical settings that augment the learning process and will have their skills reinforced in practical environments in which they can see the interplay of writing, shooting, and editing. Through hands-on experiences enhanced by involvement of a local business partner and updated technology, students will identify and demonstrate positive work behaviors, perform editing procedures for both audio and video production needs, and evaluate employment opportunities as a result of this project. Following the project, student interest in STEM and increased competency in the field will be measured using a pre and post survey, interview, and teacher evaluation of team projects.
Flagler County Education Foundation	**Growing Food in the 21st Century**	Students, teachers and University of Florida Extension partners will work together to install a hydroponic system, an aquaponic system and a weather station at Bunnell Elementary School. Students will collaborate with experts to share ideas, test theories and learn current research techniques, to improve the quality and quantity of food that we eat. In addition students will expand their knowledge of STEM careers in agriculture and gain an appreciation of the farming industry which makes up a significant portion of our local economy in Flagler County.
Hernando County Education Foundation	**AHA! I get it with Aquaponics!**	The Aquaponic project will focus on fulfilling the STEM initiative which develops our future mathematicians, scientists and engineers. The project will focus on students in the middle school grades in a Marine Lab Elective. The goal of the elective is to expose students to the newest technology while providing a hands-on, real world experience which leads to authentic learning. Students in the elective will begin growing seeds in germination stations using heat mats. Once seeds have germinated they will be transplanted to the aquaponics system. The system will consist of two growing beds fed by a tilapia fish tank. Once the plants reach a certain height they will be transplanted to an outdoor garden. The food grown using this technique will be used in classrooms for testing, tasting, data collection, selling, and other activities which engage learners and put to use skills learned in math, social studies and science.
Hernando County Education Foundation	**Propelling Students to the Depths of STEM in Sub Zero-A Two-Man Human-Powered Submarine**	Students entering engineering programs often have as their main interest marine engineering, automotive engineering, or aeronautical engineering. The focus of this project will be on fulfilling the STEM initiative which develops high school students in the areas of math, science and engineering. Students will test the practical applications of engineering concepts, participate in the problem solving of the project as well as build a successful team through conducting in water testing of hull and mechanics in preparation for the engineering competition. The students will construct the submarine and its propulsion and control mechanisms.
Hernando County Education Foundation	**Aerodynamics: Rocket Nose Configurations**	The *Aerodynamics: Rocket Nose Configurations* project will focus on fulfilling the STEM initiative which develops our future mathematicians, scientists and engineers. Fourth and fifth grade students will develop skills in reading, research, mathematics and engineering. Students will research the history of rocketry and produce an Expository Essay. Students will perform a series of calculations in determining the best rocket nose configuration. Through exploring concepts of drag, frictional drag, payload, pressure drag, thrust, loft and recovery students will enhance their STEM knowledge. Students will build a Generic E2X/Space Loft Model Rocket using nose cone configurations they identified and selected, launch their test rockets, measure altitudes and make comparisons through team launches to determine the most efficient nose cone configurations.
Education Foundation of Indian River County	**Mapping Success: Geospatial/Geographic Information Systems**	The purpose of this geocaching project is for high school students to teach middle school students how to use GPS. High school students will act as mentors to middle school students during the activity then both student groups will apply their skills during the activity. While learning these valuable skills, students will be using the same geospatial tools that GIS Technicians in the industry are using.
Educational Foundation of Lake County	**STEM Electronics (Digital Electronics)**	Students will learn about the basics of electronics by exploring amplifiers and analog/digital circuits and how to read schematic diagrams. Students will then apply the knowledge during the investigation of career opportunities in the STEM field (e.g. Electrical and Electronic Engineers/Technologist, Computer, Civil, Mechanical, and Aerospace Engineering, Industrial Electricians and Engineering). STEM activities will evolve around creating different electronic experiments, radio transmitters and receivers, lighting effects, and sound effects. Students will explore amplifiers, analog and digital circuits and how to read schematic diagrams. Students will acquire an understanding of the relationship of technologies and the connection between technology and other fields of study. Students will understand the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving. Students will work in pairs/triads to gain knowledge in electronics through hands-on projects. Each team will be required to construct, revise, and present their project to the other teams
Educational Foundation of Lake County	**Leesburg High School Squirrel Scouts**	This project is designed to introduce students to the real-world disciplines of water conservation and water management for the earth's water preservation through volunteer opportunities with local water management entities. Students will learn the importance of water conservation and management and will implement STEM skills during the project that will help to prepare them for future careers in the science/conservation field.
The Foundation for Lee County Public Schools, Inc.	**STEM-Designed T-shirt Project**	Students will design a logo for t-shirts to be worn to all STEM-related activities at area businesses. This program introduces students to STEM companies that provide/produce solar energy, alternative fuel, biomedical engineering, architectural engineering and more. Students actively participate by job shadowing and participating in hands-on activities. Students will work with local marketing and design firms as well as with design teachers within their high schools to design a specific logo that relates to how STEM is incorporated in their school.
Foundation for Leon County Schools	**Weather Wiz: A Collaborative Weather Application Project**	In this project, students will create an iPhone app that pulls data from a District-wide weather initiative in order to provide students and parents with the ability to check on the weather stations at each school site. Each school in our District will be piloting a weather station at their school, and this is the way that the virtual school would like to integrate the virtual world into this project.
Foundation for Leon County Schools	**The Octo-PI-Rates Robotics Program**	The objective of the *Octo π-Rates Robotics Program* is to teach science, technology, engineering, arts, and mathematics (STEAM) through hands on robotics. Students will be tasked to design and build a robotic vehicle to accomplish a specific physical game challenge (soccer, basketball, racing, moving objects, etc.). This robot must be both autonomous and operator-controlled and able to work with other robots. During a six week "build season" students will be faced with the challenge of applying concepts taught in their science, math, and physics classes towards the design of their robot. This may include calculating required torques, speeds, electrical power, gear ratios, etc. Students are then required to participate in hands on activities, such as mechanical engineering, computer programming, CAD design, electrical engineering, engineering technology, machine fabrication, and more.

Foundation Name	Project Title	Project Abstract
Foundation for Leon County Schools	**Catching the Wind**	The students will learn how to build an efficient windmill design by taking into account how the lift and drag caused by the movement of wind can be used to make the blades of the turbine move. Through their readings, hypothesis and by trial and error, the students' goal will be to build the most efficient blade design that will produce the most electricity. Through this activity, the students' team skills will be exercised as well as their creativity and their ability to apply engineering knowledge. The students will understand how electricity is produced and distributed and some of the environmental issues of using coal and nuclear fuels to produce electricity.
Foundation for Leon County Schools	**2014 Leon County Elementary STEM Bowl Competition**	The STEM Bowl integrates all four elements of STEM. Students will work in school teams to answer questions regarding topics in science, technology, engineering and math. The teams will then work together on an engineering task where they will focus specifically on design, construction and performance. Professionals from the Nat6ional High Magnetic Field Laboratory will conduct all-day training at each elementary school and work with the students involved in the STEM club. They will also assist by judging our engineering portion of the competition.
Manatee Education Foundation	**"TRIPLE 'I' - E: Interactive Investigations using Ingenuity and Explorations**	Students attend a science/STEM Lab where the instructor introduces, involves and immerses each grade level class in STEM vocabulary, activities, investigations, experiments, and projects. Through these, the students are encouraged and challenged to participate, learn to think critically and apply the science "behind" Science, Engineering and Technology using scientific and mathematical concepts and problem solving. As a part of this program, the science Instructor encourages all students to think like scientists, engineers, technologists and mathematicians by using STEM vocabulary.
Public Education Foundation of Marion County	**The Wind Beneath My Blades**	*The Wind Beneath My Blades* project will provide each student in the Power Generation Academy with a Wind Power kit from which they will design and build electrical generation wind turbines. Our students will become acquainted with the basics of renewable energy generation, wind energy and power production. Students will benefit from the knowledge of energy workforce professionals and engineers and understand how what they are learning in class applies to real world applications. Once students have assembled their own wind turbine, the turbines will be used to conduct experiments and generate mechanical power and electricity.
Nassau County Public Education Foundation	**Robotic Design and Programming**	By building VEX robots, the Physics Honors classes will explore the mechanical and programming aspects of robotics. Students will extend their classroom application to STEM careers by visiting Sally Corp. which is a Jacksonville engineering firm that designs and builds robotic devices for various industries. To showcase their robots, the design teams will hold intramural competitions within their high school. The learning outcomes of our project will be for students to increase their understanding of scientific principles associated with mechanical engineering, sensor use, and programming as evidenced by VEX curriculum quizzes. They will be able to successfully work together and improve skills in project management, teamwork, leadership and communication.
Nassau County Public Education Foundation	**Manufacturing Robots**	This project will improve student learning in the STEM related field of manufacturing robotics. By building VEX robots, the High School High Tech program for Exception Student Education (ESE) class will explore the mechanical building process of robotics. Students will extend their classroom application to STEM careers by visiting Sally Corp. which is a Jacksonville engineering firm that designs and builds robotic devices for various industries. They will also visit ITT Technical Institute to explore post-secondary training for STEM careers. To showcase their robots, the design teams will participate in an intramural competition with the regular education Physics classes in their high school.The learning outcomes of our project will be for students to increase their understanding of scientific principles associated with the technical manufacturing and mechanical engineering as evidenced by VEX formative performance assessments. They will be able to successfully work together and improve skills in project management, teamwork, leadership and communication.
Okaloosa Public Schools Foundation, Inc	**STEM Innovation with Raging Robots**	This project incorporates technology to improve student achievement in science and math—especially for low-performing students—while teaching leadership skills to high school students involved in the project. It was developed to address the specific skills identified by community partners in the Okaloosa Economic Development Council and through the Northwest Florida Skilled Technician Talent Supply Task Force. Staff will be provided with professional development designed to implement curriculum using technology and project-based learning and to align STEM curricula from middle school through high school. Flight, engineering and robotics will be included in the middle school instructional modules. Lego EV3 robots will provide the platform for mastery of the STEM initiatives. A significant component of the proposed project will be the establishment of Robotics Teams at each participating middle school and high school. High school students will mentor middle school Robotics Team members in competitions. High school Robotics Team members will participate in regional and nationalcompetitions.
Okaloosa Public Schools Foundation, Inc	**STEM at Work: It's NOT just for the Birds!**	*STEM at Work: It's NOT just for the Birds!* is a partnership between Destin Middle School and the Choctawhatchee Audubon Society. Funding will be dedicated to the purchase and installation of a bird-cam to capture the activity of osprey that nest on the school grounds. There will be a live stream on the school web site so that visitors can watch the osprey in real time. Each month, fifth grade students will have lunch with their business partners, followed by bird walks. Data collected from monitoring birds will be recorded and reported on the national e-bird.org web site. In addition, classroom presentations will serve as the foundation for exploring STEM-related careers that are linked to ornithology and the technology used in the project.
Pasco Education Foundation	**Robots Expand throughout Pasco's Middle Schools**	Students will design robots to incorporate gear trains and additional motors. Then they will program the sensors to help solve given missions. After the students have had the opportunity to do one variation of building and programming, they will be given a different more complex robotic system. The students will again begin using the design process. First the students will divide into teams, and take a pretest. The following class sessions will direct the students in building more complex robots and discussing the variations in design, introduce usage of new and different sensors, gears, and even different motors. The students will combine these new skills to program and test their creations.
Pinellas Education Foundation	**More Phun Physics**	Sixth grade teachers at Osceola Middle School will teach STEM lessons on forces and motion by using hands-on kits. In the first project, students will work in groups to build a mouse-trap vehicle. Students will follow the design process to see direct application of STEM topics as they build and race vehicles to see who can go the fastest and the farthest. Concepts of potential and kinetic energy, speed, velocity and circumference will be taught in the unit. After completing this unit, students will focus on forces and how they apply to rockets as they build and launch straw rockets. The straw rocket project teaches projectile motion, center of gravity, initial velocity and introductory aerodynamics. Students will be introduced to Newton's laws of motion and calculate acceleration for this unit of study. Students will have a blast building and launching each of these projects and will be exposed to the exciting opportunities available in STEM careers.
Polk Education Foundation	**Getting Clinical about STEM**	Medical Academy students will do clinical time at the Rohr Retirement Home, Lakeland Regional Medical Center and the Bartow Fire Department, getting multiple experiences to practice what they have learned. Students get real world experience with patient care and will be taught how to use various pieces of equipment using science, technology and math skills. Students will be assigned preceptors and watched while doing procedures. They will be evaluated on how well they did with each technique.
Santa Rosa Education Foundation	**Setting our Sights on STEM**	Students will visit workforce partners and conduct interviews about STEM-related careers. This project-based learning exercise will promote innovation and entrepreneurial skill development as students focus on the processes of discovery, concept development, resourcing and actualization. It will also develop the personal traits and behaviors associated with successful entrepreneurial performance including leadership, personal assessment and personal management. These skills will be transferrable in all, but especially STEM, career fields.

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St. Johns County Education Foundation	**Project Green**	Students will design and construct building or machines utilizing renewable, recyclable and/or sustainable energy and/or materials. Some will work in teams to design and construct buildings or machines utilizing renewable, recyclable and/or sustainable energy and/or materials. Others will work in teams to design processes within a workplace to make it more effective/efficient utilizing technology and/or utilization of renewable or recyclable materials or equipment. Competitions will take place at each high school and they will submit one team per academy strand to then compete at the District level.
St. Lucie County Education Foundation	**Collaboration, Integration, and Innovation through STEaM**	The goal of this project is to establish well-balanced teams among educators and students based on a variety of characteristics. Educators will instruct within their specialty with a co-planned thematic units that everyone contributes to in projects related to the required benchmark concepts and skills. To support the foundational work district-wide in regard to the STEM (Science Technology Engineering & Math) initiative in collaboration with the HMH Publishing Partnership, we will host HMH regional directors, AV documentary personnel, STEM materials and Science Fusion texts, and foster the already strong relationship between our school and Dr. Lynn Howard, author of '5 Easy Step to Science Instruction' and an HMH funded collaborator. We anticipate having more guest teachers and guest scientists from the community on our campus to interact with our students and affirm the outstanding work in our classrooms through this proposal. Students, guest teachers, and award winning scientists will work along side one another on inquiry based investigative learning.
Walton Education Foundation	**Going Green with Hot Water**	The WCDC Solar Panel Installation and Solar Water Cistern Project focuses student attention on the practical application of concepts represented by STEM instruction. Through discussion of challenges facing the construction industry and the individual home builder when construction takes place in remote areas, students will increase their awareness of basic and emerging principles and concepts that impact the energy industry. Students will have scheduled opportunities to interact with representatives from the local energy industry and from the local construction association. Students will be tasked with implementing problem-solving strategies that use varying levels of math/algebra and science skills in planning, implementing, and evaluating the effectiveness of the project and the possible extension to broader applications. Throughout the project, industry representatives will assist students with the assessment and evaluation process as well as providing on-going project support.
Washington-Holmes Technical Center Foundation, Inc.	**Rockin' Robotics**	*Rockin' Robotics* will immerse 6th - 8th grade students in real-world science, math and technology changes. Teams design, build and program autonomous LEGO robots that perform a series of mission. Students will discover their own solutions to current scientific questions or problems. Teams, including coaches, mentors, and volunteers, develop competitive strategies and utilize sound engineering principles. Through their participation, students develop valuable life skills (such as communications, teamwork, leadership and project management) and discover exciting career possibilities while learning that they can make a positive contribution to society.