TERRA MINI-GRANT APPLICATION
2013-2014 SCHOOL YEAR

The Technology Education Resource & Redesign Alliance (TERRA) is a non-profit organization whose mission is to mobilize the resources, knowledge, and capacity of individuals, foundations, business and industry in shaping and facilitating educational policy, practice, and research for increased achievement in a global environment.

What this funds: TERRA's Mini-Grants are intended to support school-based projects in pre-K through 12 that are consistent with TERRA's mission, and have a positive impact on education by using technology. These grants should fund initiatives that utilize technology in a new and innovative way or sustainability initiatives seeking to encourage and support creative, local environmental education and stewardship activities.

Who can Apply: Florida public, charter, and private schools and educators are eligible to apply.

Amount awarded: A total of $30,000 will be made available for a limited number of awards ranging from $500 to $3,000. Grant applications may be submitted for the 2014/2015 school year from September 1st through midnight October 3rd, 2014. The TERRA Grant Committee will review proposals and make funding recommendations to the TERRA Board of Directors.

What we are looking for: TERRA seeks applications for projects in which students participate in learning experiences that utilize technology in an innovative way or promotes environmental sustainability. **Funding is intended to encourage and support creative activities that build on the unique assets and strengths of individual education communities.** As part of this project, individuals receiving awards will be required to share what they learn with the broader community through outreach such as public events, presentations and displays and/or media engagement. Preference will be given to projects with matching funds or in-kind services.

Details:

- **The deadline for the 2014-15 school year is October 3, 2014. Applications received after this date will not be considered.**
- Financial assistance is limited to $3,000 per school, per year.
- Grantees will be required to provide ongoing feedback of grant activities, documentation of their project, including a financial report of how money was spent, at least 5 high-resolution digital photos (including publicity releases), and a short reporting form.
- The Teacher/Applicant listed is whom we will contact regarding your application.
- Inquiries should be submitted via email to: grants@terraonline.org.

Application Instructions:

- To apply, please submit this completed form by October 3, 2014.
- Fill out the form completely
- Gather appropriate signatures. Applications without signatures will not be considered.
- Submit signed proposal via e-mail to grants@terraonline.org with your school name contained in the filename.
- We will confirm receipt of your application within 2 weeks via email. If you have not heard from us, please contact us at grants@terraonline.org. Awards will be sent within one month of application submission.

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A. SCHOOL AND APPLICANT INFORMATION

Submission Date:	October 2, 2014	**School Year:** 2014-2015
School Name:	Gamble Rodgers Middle School	
Applicant Name:	Brock O'Shell	
Principal Name:	Greg Bergamasco	
County:	St. Johns County	
Type of School:	X **Public** o **Private** o **Charter**	
Student Enrollment:	823 Students	**Number of Teachers:** 47 Teachers
Range of Grade Levels at School:	**6 – 8**	**% Eligible for Free/Reduced Lunch: 47%**
Applicant's Phone #(s):	**(904) 547-8700**	**(904) 547-3959**
Applicant's Email Address:	**Brock.oshell@stjohns.k12.fl.us**	
Applicant's Affiliation to School/Organization	**Instructional Technology Program Specialist for the school district.**	
If Applicant is a Teacher, please list:	**Teacher's Grade Level(s): NA**	**Teacher's Subject(s) Area: NA**
If Parent/Community Volunteer or Other non-school staff, please list School Contact as a Co-Applicant:	**Co-Applicant Name:** Brian Radaker	**Co-Applicant Affiliation to School/Organization: Teacher**
If Co-Applicant is a Teacher, please list:	**Teacher's Grade Level(s):** 6th, 7th. And 8th	**Teacher's Subject Area(s):** STEM Vocational 1, 2, and 3

B. PROGRAM INFORMATION

Please list the focus area(s) for this TERRA Mini-Grant request.	STEM	Earth Science	Math	Environmental Science

C. PROJECT INFORMATION

Project Title: WeatherStem Weather Station	
Project Start Date: Oct 2014	**Project End Date:** Ongoing Project
# of Students Participating: 823 Students Unlimited community members	**Grade Levels of Students Participating:** 6th, 7th, and 8th

Mini-Grant Abstract (300 word max):
Briefly describe what your proposed project is about. Abstracts of winning proposal will be viewable at www.terraonline.org

The WeatherStem Weather Station is a weather station that collects data on current weather conditions in the area. The weather station then transfers the data to an online website for students, teachers and community members to observe and actively participate in the tracking of weather patterns. In addition, the data is stored and able to be viewed in order to analyze past trends and predict future weather conditions. In addition, a live weather camera is installed to take video and still shots of current weather conditions. Sensors are also used to monitor different patterns soil conditions to aid in finding which natural products grow best in the desired location. This WeatherStem weather station is not only a tool used by students who are learning about the weather, weather patterns, and tracking data, but WeatherStem also provides an interactive tool for community members and local farmers to collaborate and collect data about their surroundings.

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Mini-Grant Project Proposal (1500 word max)
Please explain how your proposed project/activity will enhance learning for your students. Include the following:

1) How is your project innovative? *(25 points)*
2) How will it fit into your curriculum (include standards)? *(10 points)*
3) How will it encourage long-lasting change in your classroom, school or community? *(20 points)*
4) How will technology be utilized? *(20 points)*
5) What evidence will you collect to show student gain? *(10 points)*
6) How will participants share your project results with the community? *(15 points)*

1.) This project is an innovative, interactive new-age way of collecting and reporting data based on weather patterns in our local community. The project encourages collaboration between students, teachers and community members in order to make judgments based on data collected by the weather station. Students will learn how to track, monitor and create predictions about the local atmosphere. Innovative tools such as soil sensors, leaf wetness monitors and other garden related tools can help to make educated decisions in the field of horticulture. Local community members will use this weather station to benefit their trade and the overall output of goods in our community.

2.) Below are national and state standards that are directly connected to this grant opportunity. WeatherStem allows for a cross-curricular learning prospect that will affect not only students, but community members combined.

Standards met with WeatherStem weather station:

LAFS.6.SL.1.2 Interpret information presented in diverse media & formats (e.g., visually, quantitatively, and orally) and explain how it contributes to a topic, text, or issue under study.

LAFS.6.SL.2.4 Present claims & findings, sequencing ideas logically & using pertinent descriptions, facts & details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, & clear pronunciation.

LAFS.68.RST.1.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LAFS.68.RST.3.7
Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

LAFS.68.WHST.2.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Common Core Math for Science and Technical subjects:

MAFS.6.EE.3.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between dependent & independent variables using graphs and tables and relate these to the equation. *For example, in a problem involving motion at constant speed, list & graph ordered pairs of distances & times, and write the equation d=65t to represent the relationship between distance and time.*

MAFS.6.SP.2.4 Display numerical data in plots on a number line, including dot plots, histograms & box plots.

MAFS.6.SP.2.5 Summarize numerical data sets in relation to their context, such as by:

a. Reporting # of observations.

b. Describing nature of attribute under investigation, including how it was measured & units of measurement.

c. Giving quantitative measures of the center (median and/or mean) & variability (interquartile range & or mean or absolute deviation) as well as describing any overall pattern & any striking deviations from the overall pattern with reference to the context in which data was gathered.

d. Relating the choice of measures of center & variability to the shape of the data distribution and the context in which the data was gathered.

SC.6.N.1.1 Define a problem from the 6th grade curriculum, use appropriate reference materials to support

scientific understanding, plan & carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, (independent/manipulated, etc) collect & organize data, (qualitative & quantitative) interpret data in charts, tables & graphics, analyze information, make predictions, and defend conclusions.

From 6th grade Science based Standard Map:

SC.6.E.7.1 Differentiate among radiation, conduction & convection, the three mechanisms by which heat is transferred through Earth's system.
SC.6.E.7.2 Investigate & apply how the cycling of water between the atmosphere & hydrosphere has an effect on weather patterns & climate.
SC.6.E.7.8 Describe ways that human beings protect themselves from hazardous weather & sun exposure.
SC.6.E.7.9 Describe how the composition & structure of the atmosphere protects life & insulates the planet.
SC.6.E.7.5 Explain how energy provided by the sun influences global patterns of atmospheric movement & the temperature differences between air, water & land.
SC.6.E.7.3 Describe how global patterns such as the jet stream & ocean currents influence local weather in measurable terms such as temperature, air pressure, wind direction & speed, and humidity & precipitation.
SC.6.E.7.4 Differentiate & show interactions among the geosphere, hydrosphere, cryosphere, atmosphere, & biosphere. Differentiate between weather & climate.

For Career/vocational Wheel courses:

1.) Demonstrate problem-solving skills related to, or use techniques in the subject area. (data and conditions)
2.) Locate and use data related to the subject area.

3.) This opportunity will encourage a long-lasting change in the classroom, school and community. This tool will provide a cross-curricular opportunity to reach all students, no matter their interest. Not only will this opportunity increase knowledge within the area of Science and STEM, but also within written expression and public speaking/reporting. Chances to collaborate between students and community members will give individuals involved a sense of community and togetherness. The WeatherStem weather station can be used in combination with other school related programs and systems such as student-led greenhouse projects, science fair and STEM fair construction.

4. WeatherStem is a weather system based specifically within the realm of technology. The installed video cameras continuously collect, report and show data in the given area. WeatherStem allows students to access modern data concepts and be coached through foundational web techniques. Each station is customized to assign a personalized and prescriptive based STEM curriculum. In addition, WeatherStem allows data to be shared through social media, which encourages students to get involved with something that is relatable to their life. Finally, the WeatherStem online accessible "dashboard" broadcasts weather updates to earn local advertising dollars to directly benefit the school and the community.

5. The collectable evidence gathered will impact student gains and will be evident in student knowledge of STEM, Science and Mathematics related concepts and standards. Formative and summative results can be used to show the increase of student knowledge and performance of the standards based on national and state strands. The WeatherStem website can also assist teachers with interactive lessons and plans to best implement this opportunity into the everyday classroom. Finally, evidence that this project is relatable to student growth will be maximized with the opportunities to collaborate with outside business and community members in the field of horticulture.

6. The interactive website, social media and regular meetings with community members will strengthen relationships and show the larger impact of how this project can benefit more than just the students within a school's building. Video feed and still shot photography will instantly project results to community members. Up to the minute tracking will give local residents a reliable source of data to use to build their business. Positive relationships and interactions between students and community members will advocate for career and college ready based skills that many students lack. Students will be able to assist community members with ideas and solutions to local problems (lack of growth in crops, droughts/excessive rain, humidity concerns for harvest, etc.). This ownership in learning and leading a successful project will turn our students into leaders in the community.

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D. BUDGET: Describe all costs associated with your project activity. (*Attach additional pages if necessary)*

Service/Item Description	**Cost**
WeatherStem Weather Station/Garden Sensors/Cloud Camera from UCompass	$2000
Installation	$1000
WeatherStem Software/Networking from UCompass	$3000
Total Cost of Project	**$6000**
Amount requested from TERRA:	**$3000**
If matching/additional funds have been identified to help pay for your project, please list →	**Source:** UCompass
	Amount: $3000
If any goods or services have been donated for this project, please list →	**Source:**
	Goods/Services:

E. COMMITMENT

By submitting this application and signing below, you agree to the following:

- TERRA is not liable for any injuries or losses that may occur as a result of participation in the proposed project.
- The applicant is responsible for submitting required documentation via e-mail to TERRA including on going updates, financial report, high-resolution digital photos (and media releases) that are cleared for use in TERRA's outreach materials, and any mini-grant project-related lessons developed. A short reporting form will be sent to schools when awards are made.
- Schools that do not submit reporting documentation materials automatically waive this remaining 10% and may jeopardize future funding opportunities.
- Equipment purchased using mini-grant funds will become the property of the school receiving funds.

Applicant's Name:	Brock O'Shell	
Applicant's Signature:	Brock O'Shell	Date: 10/2/14
School Administrator/ Principal's Name:	Greg Bergamasco	
School Administrator/ Principal's Signature		Date: 10/2/14
School Address (for mailing of award)	6250 US 1 South St. Augustine, FL 32086	