

Project summary

Cartoogechaye Elementary School is a rural K-4 school that serves 360 students. We are a North Carolina P.E. demonstration school as well as a NASPE National P.E. program of excellence. We constantly strive to offer our students a variety of lifetime skills so that they may find activities they can enjoy and participate in outside of school hours. Our goal is to educate students so they can make healthy active choices throughout their life.

Another goal of our program is to introduce new technology and to develop 21st century skills to our students. We feel that by adding the GPS technology (Global Positioning Systems) to our existing program, we will open a whole new world of exploration, curiosity, collaboration, problem solving and critical thinking to our students. This will be facilitated by teachers as the students learn to use the GPS devices for physical as well as cognitive challenges during our classes. Activities will include a basic understanding of what a GPS unit is used for as well as activities such as Geocaching. We are fortunate to have a large campus with a variety of terrain. This makes for an ideal “classroom” in which to begin this project.

We plan to use community as well as University resources to implement this project such as the Nantahala Hiking Club as well as the Outdoor Education Classes taught by Debby Singleton and the Seminar 496/596 class taught by Sarah Lowell.

SUTEP Project Narrative

Cartoogechaye Elementary School

Rationale: GPS systems have a variety of uses in our high tech society. Many students and adults are unaware of the recreational uses that are possible through the use of GPS units. In an effort to introduce more technology into our Physical Education curriculum and to develop strong 21st century skills as well as increasing the fitness level of our students, we feel the GPS units will help us to meet the goals. Introducing the use of the GPS units will also involve our community partners, the Nantahala Hiking Club, as most members that volunteer are trained in the use of GPS units for a variety of activities. Classes at WCU will also be involved in implementing this project (this will be discussed further in another segment.) Students who may not be interested in outdoor activities will likely be drawn to this activity. As one of our hiking club volunteers said “using GPS units with children can help prevent Nature Deficit Disorder, as it gives a new purpose to outdoor exercise and activity. Our intended outcome is for students to learn to use the GPS technology while developing 21st century skills and to enjoy the outdoor activities they will participate in.

Potential Collaboration: There will be a very strong collaborative effort between Cartoogechaye Elementary School and WCU in the implementation of this project. The students in Debby Singleton’s Outdoor Education class will work with small groups of students to facilitate learning how to use the units in a variety of activities such as geocaching. Students in Sarah Lowell’s Seminar 496/596 who are seniors majoring in Physical Education will also be involved with the students in the implementation of this project. The college students will benefit from using this technology in an elementary PE class setting as this is hands on work specific to their course of study.

Narrative Page 2

Cartoogechaye Elementary School

Potential for Enhancing Student Learning: Our 3rd and 4th grade classes have 40 minutes of P.E. per day with two certified Physical Education teachers. Toward the end of class one day we brought up the subject of using GPS units. The majority of students who were familiar with them had them in their cars. Three students had used them with a parent while hunting in the woods. This conversation was an informal assessment that let us know our students had very little knowledge about what a GPS unit was used for and even less knowledge about the variety of uses. None of the students had ever heard of Geocaching. This information would suggest that a tremendous amount of student learning will take place. Learning will be enhanced as the students have hands on experience in learning to use the units and the activities they are involved in. The GPS units will be used by groups of 2-3 students at a time. The group will have to work together as they learn to use the unit and participate in the activities. Collaboration and decision making will develop as they are necessary components in sharing the GPS and finding the caches in the Geocaching activities as well as basic electronic orienteering skills. Critical thinking is necessary in order to operate the unit, interpret the information from the unit and to ultimately find the cache using the unit. Problem solving linked to curiosity and exploration is a critical component of success in using the GPS as are all the above mentioned 21st century skills. Using technology and learning about the various global uses for GPS units will be an interesting lesson as well.

Budget for SUTEP Grant Proposal

Using Global Positioning Systems to Promote 21st Century Skills and Integrate
Technology into the Physical Education Curriculum

Cartoogechaye Elementary School Franklin, North Carolina

October 25, 2011

After talking with members of our local hiking club, and instructor from Western Carolina University, and an REI sales person that specialized in GPS units and consulting various websites, we were able to narrow down the best unit for our school use to two different models. Both models were designed to be used by children as they are easy to navigate and very durable and come in bright colors that are less apt to be lost. They are as follows:

1. The Lowrance iFinder GPS Unit for \$100.00 each
2. The Apisphere Geomate Jr. Geocaching GPS unit for \$70.00 each

We would like to purchase 10 GPS devices. If we were to be funded the entire \$750.00, we would likely purchase ten of the \$70.00 units and use the remainder for shipping and handling charges.



October 26, 2011

Sandy Ballinger
Teacher Recruitment
149 Cordelia Camp Building
Western Carolina University
Cullowhee, NC 28723

Dear Sandy,

This is a letter of support for Brian Crupi and Sarah Lowell, from Cartoogechaye Elementary School in Macon County, who are applying for a grant to purchase 10 GPS (Global Positioning System) units, as part of a technology and 21st Century skill-building unit for their physical education program. Working through a partnership with my HPE 305: Adventure-Based Physical Education course, WCU students will provide assistance in the creation and implementation of a unit on geocaching with the GPS units for the elementary students.

Geocaching involves a geography-based approach to problem-solving and is a fun and engaging way to measure students' understanding of latitude and longitude, global navigation and the Global Positioning System. It also tests their ability to use technology. Activities can be adapted for various grade levels and enhance a variety of subject areas, including geography, math, and science.

The opportunity to add GPS units to their physical education program adds yet another element that demonstrates a commitment to interdisciplinary learning in an active environment. Please contact me if you have any questions regarding this partnership.

Sincerely,

A handwritten signature in black ink, appearing to read "Debby Singleton".

Debby Singleton

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