Annotated Bibliography

GPS CLUB

1. Hubbard, J. (2007). *Educaching GPS Based Curriculum for Teachers*. Maumee, OH: SDG Creations.

   This curriculum manual is the perfect resource for a teacher beginning to explore using GPS with their students. The Teacher Training section covers the basics of GPS, how to create hunts for students, and contains beginning activities to get started. The Lesson Plans section has 20 math and science-related plans which align with national standards. The Field Sheets section of the manual has reproducible worksheets to send into the schoolyard with the students (as well as a CD with customizable and printable documents). There is also a grant writing section to help teachers acquire enough GPS units for their building. Finally, the curriculum has a Beyond the Basics section to provide educators with advanced ideas to take the concept far beyond a club and help better connect students with the community and world around them. More information and sample lesson plans available at www.educaching.com.

2. Geocaching - The Official Global GPS Cache Hunt Site (http://www.geocaching.com)

   This is the web site that sparked the world-wide GPS treasure hunting sport known as geocaching. Type in your zip code, address, or find a location in the world using the google maps feature and instantly find coordinates to hidden "treasure" all over the globe! This site would be an excellent resource for a teacher to find educational ideas for their own student hunts, as many geocaches are informational in nature. For example, earth caches center around finding a geological location and puzzle caches involve problem-solving in order to find them. Teachers may also find

geocaches hidden in the surrounding area of the school and take their students on a field trip. Use of this web site could also help teachers and students in the club to better connect with the world around them. For example, the students could create educational hunts for geocachers to find or the students could create missions for travel bugs and send them around the globe, all the while keeping track of their adventures online. The possibilities really are as endless as your imagination. Teachers for years have been using this web site to connect the exciting sport of geocaching to their students' academics, as indicated in the online forum located on the site entitled "Gps In Education."

3. Terra Clues for Schools (http://www.terraclues.com/schools)

This site stems from its parent web site entitled http://www.terraclues.com and enables teachers to create lists of online google map hunts for their students. The beauty of this concept is that students need to search not only maps, developing spatial awareness, but also need to search the world wide web to retrieve information that will help them solve clues and find the right spot on the map. This latter skill helps students refine their search methods and sift through Internet information that is valuable vs. insubstantial. Teachers can create their own clues and hunts or select from the online community's educational hunts. Customizable and password protected, students log into their own teacher's page of hunts only and can even use a screen name which will help the teacher keep track each individual student's progress. This web site offers a terrific rainy day activity in the computer lab, should your planned outdoor scavenger hunt fall prey to inclement weather!

4. The Editors and Staff of geocaching.com. (2009). *The Complete Idiot's Guide to Geocaching* (2nd Ed.). Alpha Publishers.

This book is a collaborative effort from the staff of the popular geocaching web site listed above. It is a great beginner's guide for educators who wish to make GPS treasure hunting a unique part of the learning process for a child. In depth descriptions of how GPS works, how to select the best GPS handheld units, and

the basics of the sport of geocaching will inform the beginner and novice users. Complex and exciting ideas like the Confluence Degree Project and the Wherigo GPS feature will challenge the most advanced users to get the most out of the technology.

5. Shaunessy, E., et. al., Promoting Inquiry in the Gifted Classroom Through GPS and GIS Technologies. *Gifted Child Today (Waco, Tex.: 2000)* v. 29 no. 4 (Fall 2006) p. 42-53.

   Broda, H. W., et. al., Using GIS and GPS Technology as an Instructional Tool. *The Social Studies (Washington, D.C.)* v. 94 no. 4 (July/August 2003) p. 158-60.

   Both articles above have been extremely influential in research of using GPS club with students. Any teacher wishing to pursue this academic club and need a rationale and/or purpose for doing so should read these articles by Shaunessy and Broda. The case for using GPS *and* GIS (geographic information system) and the benefit of using them with students is plainly stated. Not only are these systems described in detail, but ideas and activities are presented as to their application in education.

6. The NASA SciFiles. (2004-2005). *The Case of the Technical Knockout* [television broadcast]. (Available for download or streaming video at http://www.archive.org/details/NasaSciFiles-TheCaseOfTheTechnicalKnockout).

   The NASA SciFiles was originally broadcast from 2001-2006 via satellite and PBS broadcasting stations as a distance learning approach to problem-based learning. A group of diverse students called the Treehouse detectives form a team of super sleuths who tackle math, science, and technology integrated issues. The program incorporates online activities, printables, and virtual tours that are all part of the student's learning process. The episode entitled "The Case of the Technical Knockout" does a terrific job describing navigation, geocaching, waypoints and latitude/

longitude and is a perfect supplement to any teacher's GPS Club. The educator could play the video (60 minutes) as a whole or as it was meant to be in 15 minute segments and utilize the partner online activity called "The Mysterious Technical Glitches." Though the video is not broadcast anymore, it can be downloaded from the Internet site listed above or from YouTube. The online activity can be found at http://scifiles.larc.nasa.gov/kids/Problem_Board/problems/knockout/index.html.

7. Google Earth (version 5.0). [software application]. Download file at http://www.earth.google.com.

Download the free Google Earth application and wow your students with layer upon layer of mapping information that will help them analyze and make spatial sense of the world in which they live. This resource can be useful for students to see and manipulate where it is they are hunting on the school grounds. The teacher can use the application to print maps for students or preliminary mapping before setting up scavenger hunts. The students can take photos on their GPS hunts, upload the photos and waypoints they have visited and create online virtual tours of their geo-journeys! If Earth gets a little boring, students can also explore the depths of the oceans or even the moon and Mars.