

Nassau BOCES Outdoor & Environmental Education

Instructional Plan for GPS: Geocaching & Earthcaching

The overlying objective of the Nassau BOCES GPS Program is to provide specific content aligned to each grades' curriculum and real world applications for NYS Common Core Standards. Alignments are on reverse side of this document.

Vocabulary (teacher may add to list or request emphasis)

cache	earthcaching
geocaching	GPS
GPS receiver	latitude
line of sight	longitude
satellite	seismometer
waypoint	

Program Logistics:

- Group Size:
15 students/naturalist
- 1 adult chaperone/student group
- 1.5-2 hr session is typically combined with another program for a 4 hr. day.
- The Earthcaching program takes place at Caumsett State Historic Park. Geocaching can take place at our Brookville or Caumsett sites.

**Call for
pricing and to schedule:**

516-396-2264

See us online:

www.nassauboces.org/outdoors



*We are more than just a
field trip...
we are a
learning experience!*

A representation of the 24
navigational satellites
that surround our Earth

Lesson Objectives: Students will be able to...

Develop the skills necessary to locate a hidden cache or geologic feature:

- Use of a GPS receiver and how it works.
- Understand the limits of the receivers and realize that it is often best to know other skills: use of topo maps and/or a compass

Determine other purposes for learning GPS skills:

- See the potential of Geocaching and/or Earthcaching as a life-long recreational activity.
- The use of GPS as a "tool" for collecting data to mark locations when assessing the biodiversity of a given area

**(If Earthcaching is requested):
Explain the formation of LI**

- Shoreline erosion
- Use of topo maps
- Glacial deposits
- See more on Instructional Plan for Glacial Geology

Instructional Activities (can include but not limited to):

- Demonstration and practice the use of a GPS receiver.
- Inputting of waypoints
- Review of topo maps
- Following a course
- Discussion of latitude and longitude

Assessment

- The program will end with a summative "Q & A" focusing on the lesson's objectives.
- The teacher may elect to have students complete data sheets and/or writing activities back in the classroom.



This glacial erratic is an example of an earthcache "treasure"

Standard Alignments for GPS Program

Standards Type	Key Standards or Code	Standard Description	Instructional Activities
NYS Standards for Health, Phys. Ed & Family & Consumer	Standard 1: Personal Health and Fitness	Physical Education: Students will perform basic motor and manipulative skills. Students: develop leadership, problem solving, cooperation, and team work by participating in group activities. Family & Consumer: Evident when students practice communication skills that foster positive interpersonal relationships and optimum health for all family members	The GPS program is skill-based with an emphasis on cooperation and decision making, as well as pursuing good communication skills and collaboration.
	Standard 2 A Safe and Healthy Environment	Health Education: Students will demonstrate personally and socially responsible behaviors and will respect themselves and others. Physical Education: Students will demonstrate responsible personal and social behavior while engaged in physical activity. They will understand that physical activity provides the opportunity for enjoyment, challenge, self-expression, and communication.	In addition to learning new skills, students will be involved in extensive hiking throughout the day. Opportunities exist for demonstrating leadership and problem-solving and creates a positive experience when all members contribute effort.
	Standard 3 Resource Management	Physical Education: Students will also be aware of some career options in the field of physical fitness and sports.	Our naturalists are role models for an active lifestyle and often provide students with information on requirements for the job.
NYS Science Core Curriculum	Scientific Inquiry S 1.1 thru 1.3; S3.1 thru S3.3	Ask "why" questions in attempts to seek greater understanding concerning observed objects and events; seek clarification, organize objects/data through classification and use of simple charts and tables; interpret and recognize simple patterns/relationships.	The whole session is inquiry and discovery based. Observations of life occur "naturally" as students explore and encounter evidence of biodiversity along the way
	Additional Alignments	NOTE: If Earthcaching is selected, please see Teachers' <i>Instructional Plan: Glacial Geology for Physical Setting/Earth Science</i>	See <i>Geology Student Guide</i> for activities/content
NYS Common Core	Supporting Standards	Description	Instructional Activities
Math	Additional Alignments	NOTE: If Earthcaching is selected, please see Teachers' <i>Instructional Plan: Glacial Geology for Physical Setting/Earth Science</i>	See <i>Geology Student Guide</i> for activities/content
ELA Anchor Standards Grades K-5	Comprehension & Collaboration	1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	Students will participate in conversations related to their observations and data collection.
	Presentation of Knowledge and Ideas	4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	Two students per team will take a collaborative approach to problem solve a route; they will provide guidance to each other to recall procedural steps. If Earthcaching, will be responsible for presenting their observations/collections of samples to the larger group
	Vocabulary Acquisition and Use	4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.	Students will use content-driven vocabulary throughout the program and practice the use of root words, prefixes and suffixes to determine meaning (example: macro, micro)