

GPS & GEOCACHING

LESSON PLAN



WOLF RIDGESM
ENVIRONMENTAL LEARNING CENTER



CLASS DESCRIPTION: An Outdoor Skills Class

Students will get a look of how far navigational technology has come. They will learn the basic concepts behind GPS technology and how it works. Each pair of students will be given a Garmin eTrex Touch 35 GPS to practice entering and finding waypoints. Once the basics are mastered, the fun will begin. Students will practice a few basic points before taking on the full GPS course and exploring the woods of Wolf Ridge for hidden clues.

Total time: 3 hours (two hours outdoors)

Audience: 6-20 students, 4th grade through adult

Activity level: Easy to Moderate

Travel: 1 mile

Total uphill travel: 25 feet (gradual uphill)

GUIDING PURPOSE

To go geocaching, combining navigational technology with exploring in nature.

CONCEPTS

1. Technology can help us explore, discover, and communicate about our environment.
2. Global Positioning Systems (GPS) depend on sending and receiving satellite signals and on the people who use them.
3. Challenges provide opportunities for learning and growth.
4. Observation, communication and teamwork are valuable skills that improve with practice and patience.

OUTCOMES

Upon completion of GPS and Geocaching class students will be able to:

- Work cooperatively with a partner to navigate with a GPS to locate waypoints.
- Understand how the advancement of technology has contributed to society.
- Understand how a Garmin eTrex Touch 35 GPS receiver functions to navigate its screens in order to mark and find waypoints.



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Our mission is to develop a citizenry that has the knowledge, skills, motivation and commitment to act together for a quality environment.

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Wolf Ridge Environmental Learning Center and the USDA are equal opportunity providers and employers.



Equipment

- props
- pencils
- posters
- computer & power point presentation
- GPS Receivers
- fully charged batteries
- crossword puzzle sheets
- optional activity sheets
- prizes

Appendices

- Glossary
- Optional Activities
- References
- Sources
- Spiral Learning Sheet
- Planning Outline

Set-up (15 min.)

- Classroom/class prep description
- Safety Management

I. Finding Our Way (10 min.)

- A. Discovery and Navigation Tools
 - 1. Landmarks for Navigating
 - 2. Navigation Technology
- B. GPS as a Navigation Tool

II. GPS Practice (20 min.)

- A. Parts of the GPS
- B. GPS Unit Basics
- C. Practice Point

III. GPS Technology (10 min.)

- A. How GPS Works
- B. GPS History
- C. Mapping Coordinates
- D. Using a GPS - Garmin eTrex Touch 35
 - 1. Start-UP
 - 2. Basic Operations

IV. Geocaching (90 min.)

- A. Tools, Groups, Rules
- B. Geocache
- C. Observations & Stories Upon Return
- D. Marking Waypoints
 - 1. Marking Waypoints
 - 2. Hiding and Finding Caches

V. Next Steps (20 min.)

- A. Technology & Nature
- B. Geocaching Communities

Clean-up (15 min.)