



# GPS Pathfinders

## Class Outline

**Brief Synopsis:** On your mark, get set, DASH FOR THE CACHE! Students will get a glimpse of just how advanced navigational technology has become during this fast paced class. Learning the basic concepts behind GPS technology and how a receiver works is just the beginning. Each pair of students will be given a Garmin Rino 120 GPS receiver in which to practice entering and finding waypoints. Once the basics are mastered, the fun begins. Students will practice first on a small outdoor GPS course before tackling Eagle Bluff's "Dash for the Cache". In this activity, students will navigate through the woods in search of hidden caches.

### Outcomes:

1. Students will develop a navigational timeline, piecing together the navigational tools used from the past to the present.
2. Students will be introduced to the concept behind GPS technology focusing on its conception and operation.
3. Students will speculate how the advancement of GPS technology has contributed to society.
4. Students will actively manipulate a Garmin Rino 120 GPS receiver to navigate its screens in order to mark and find waypoints.
5. Students will work cooperatively with a partner sharing the task of navigating with a GPS receiver to locate hidden caches.

### Outline:

#### I. Navigational Timeline (20 min.)

Imagine how difficult it would be to navigate without the aid of some type of navigational tool? Students will piece together, in chronological order, a navigational timeline illustrating 20 different navigational tools used throughout human history.

#### II. GPS Basics (1 hr.)

The Global Positioning System (GPS) is the most significant recent advance in navigation and positioning technology. Students will learn the concept behind GPS technology and the purpose it served first for the military and now for the layperson. Each pair of students will be given a GPS receiver. Step by step instructions will be given as students learn to manipulate the screen pages to obtain specific information.

#### III. Finding Your Way & Dash For The Cache (1 hr. and 40 min.)

It is time to take what was learned inside, outside. Participating in the "Finding Your Way" activity will allow students to practice using their GPS receiver to navigate while being in close proximity to a central location for assistance. The culminating class activity is the "Dash for the Cache", an activity mirroring the recent sport of Geocaching. Students will use their GPS receiver to locate up to ten different cache sites hidden throughout Eagle Bluff's property.

### Quick Facts

**Class length:** 3 hours

**Ages:** Designed for 4th-8th grade

**Season offered:** Year-round

**Time outside:** 2 hours

**Hike length/physical activity:**

1-2 miles, moderate to high

**Pre-requisite/prior knowledge:**

None required.

**Minnesota Academic Standards:**

**Mathematics:** 6.V.C.2., 8.II.C.2

**Science:** 6.I.C.1., 7.I.A.1., 7.I.C.1., 8.I.D.2