

## **Navigation**

Navigation is one of the primary tasks of GPS. In aviation and sea travel, finding proper travel direction has required special training and various navigation aids have been used. Availability of GPS not only eased the role of a navigator, but also expanded the range of applications where principles of navigation have been implemented (e.g., transportation, agriculture, etc.).

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### ***Helper's Guide***

#### **How to Prepare**

Check proper operation of each GPS receiver. In case previous activity was omitted, set up at required waypoints that represent different markers or landmarks (e.g., flags, trees, chalk marks, etc.). Be creative in terms of requested description of the waypoint. For example it can be a code that only a person reaching the exact location can read. Specify at least one point in a location that would require obstacle avoidance and/or have limited GPS availability. Discuss students' experience in such locations afterward.

#### **Need to Emphasize**

- Many handheld GPS receivers act as a compass and map when used for navigation.
- The true benefit of GPS is that it provides the ability to know your location all the time.
- Navigation using a GPS receiver is limited when signal is not available (e.g., forest, buildings, under water, etc.)
- For an actual pathway planning, accurate base maps with different geographic features are needed.

#### **Related Links**

- [http://www8.garmin.com/manuals/Rino130\\_OwnersManual.pdf](http://www8.garmin.com/manuals/Rino130_OwnersManual.pdf)
  - <http://www.trimble.com/gps/index.shtml>
  - <http://www.tapr.org/~kh2z/Waypoint/>
  - <http://www.learn-orienteeing.org/old/lesson2.html>
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Last updated: May 12, 2008*