

Trial/Pilot Event

Contact the organizers of your tournament to find out what trial/pilot events will be held.

“Cache Me If You Can”

1. **DESCRIPTION:** During this timed event students will complete a GPS course on campus, answering general questions about the Global Positioning System; calculating velocities, time, and distances; and finding and setting waypoints using handheld GPS receivers.

A TEAM OF UP TO: 2

APPROXIMATE TIME: 30 minutes

2. **EVENT PARAMETERS:**
 - a. A team of students may bring and use one or two handheld GPS receivers and one non-programmable calculator. GPS units will *NOT BE IMPOUNDED*. Students will sign up for starting times 30 minutes apart.
 - b. **Prior to starting** teams may load their GPS unit(s) with local maps if desired. These may be already calibrated to acquire satellites but teams must show that their GPS units do NOT have any preset tracks, routes, or waypoints from the test site to help insure that teams do not unfairly share information with other teams.
 - c. **During the course** teams may not have any external help (coaches, parents, cell phones, walkie-talkies, etc.) **After completing the course** teams will turn in their answer sheet to the event coordinator and will display and then delete the waypoint memories of their GPS units for the judges BEFORE leaving the site.
 - d. The coordinate system used on the test will be WGS 84 (this is the usual system used here - many other systems are used elsewhere.) Event Supervisors should use a WAAS GPS unit to set up the test with higher accuracy.
3. **THE COMPETITION:** The competition will have between 10 - 20 stations and students will be timed from start to finish. Preferably this event should be held in a remote or secured location, it shouldn't be a spectator-event. Teams taking longer than 30 minutes will lose 20% of their score for each minute over the time limit!
4. **SAMPLE STATIONS** may include but are not limited to the following:
 - a. measuring distances (both in English and the Metric [SI] Systems) between objects or along routes,
 - b. identifying velocities en route,
 - c. setting waypoints to specific locations within the testing arena,
 - d. identifying latitude and longitude coordinates,
 - e. converting longitude and latitude annotations between Degrees, Degrees-Minutes, and Degrees-Min-Sec,
 - f. identifying altitudes/heights/elevations,
 - g. calculating areas,
 - h. finding microcaches
 - i. answer questions regarding general GPS history, uses, terminology, etc.

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5. **SCORING:**

6. Points will be earned by the accuracy and completeness of answers from the various stations. Due to differences in accuracy between different GPS units points will be awarded based on how close they are to the established value for each answer.
7. Teams will lose 20% of their score for each minute past the 30 minute time limit.
8. Teams will be ranked first by highest score and second by least time used. In other words, a team which misses one point but finishes in half of the time taken by other teams will be placed below ALL teams which score higher even though they took longer. Thus, **accuracy** is the most important factor in ranking and **timing** (within the 30 minute time limit) will only be used to break ties between two teams with the exact same score.

Event

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Sample event

“Caching Through the Snow” Event

at Davis High SADSOC 2-4-2006


Student Names _____ & _____
School _____

Final Ranking _____
Score _____/120
Total Time _____:
Time Penalty - _____ %

Please remember

Students may not have any outside communication during this event
(no using cell phones, walkie-talkies, sign language.)

- This is a timed event but time will only count as a tie breaker if two teams have the same score.
- Please be careful on the track and bleachers. It's better to be slow and safe rather than quickly injured.
- Teams need to show the event coordinator they have no GPS waypoints for any test area sites.
- Teams will need to show the event coordinator your marked waypoints and track route when finished.
- You will show the event coordinator as you delete your marked waypoints and track route afterwards.
- You will need to visit 6 micro-caches [MC] following the instructions for each one (in four of them you'll need to retrieve one object each but you'll always replace the container as you found it for other groups.)

- (10) Determine the **location** of the base of the South Goal Post in Degrees-Minutes-Seconds with 2 digit precision after the decimals. (Write down the **coordinates** of this *waypoint*.)
N _____° _____' _____" W _____° _____' _____"
- (5) Identify the **azimuth** (read in degrees from between 1° and 360°) of Francis Peak Observatory on top of the mountains east of the goal post. _____°
- (5) Give the **number of satellites** that make up the space segment (in high orbit over the Earth) used throughout the world for the GPS system. _____
- (10) Measure the **distance** (in *meters*) from the big D by the south end zone to the tall flagpole by the north end zone. _____ *m*.
- (10) [MC] Find and **describe the contents** of the tube #8 at N 41° 01.708' W 111° 55.775'.
Then return it as you found it. _____
- (10) [MC] Find and use the stamp in the #5 tube at N 41° 01.732' W 111° 55.774' to **mark your paper** in the box. Then return it as you found it. ==>>

- (10) [MC] Retrieve tube #9 at N 41° 01.759' W 111° 55.766' , **remove one item** from inside and return the rest as you found them.
- (10) [MC] Retrieve tube #3 at N 41° 01.794' W 111° 55.784" , **remove one item** from inside and return the rest as you found them.
- (10) Identify the **elevation/altitude** at the base of the north goal pole in feet. _____ *ft*.
- (10) [MC] Retrieve tube #6 at N 41° 01.771' W 111° 55.833' , **remove one item** from inside and return the rest as you found them.
- (10) [MC] Retrieve tube #7 at N 41.029350° W 111.931050° , **remove one item** from inside and return the rest as you found them.
- (10) Locate the word “**HI**” painted in black on the top bench of the west section of bleachers and record its **coordinates** of its waypoint using degrees only with 6 digit precision past the decimal.
N _____° _____' _____" W _____° _____' _____"
- (10) Measure the distance and average speed to travel once around the track (in *feet*) in the outside lane. Then show the Event Coordinator your trip odometer and average speed data to verify.
(Remember there are 5280 ft/mi) Distance = _____ *ft*. Speed = _____ *mph*
- Now quickly return the 4 microcache objects, your GPS receiver, and this answer sheet to the check-in area.