



Surveying Merit Badge

Teaching the Rising Generation
about our Profession



Surveying Merit Badge Facts

- One of the original 57 merit badges in 1911
- 142,583 Badges have been awarded
- 1,166 were awarded in 2007



First Aid

- Show that you know first aid for the types of injuries that could occur while surveying, including cuts, scratches, snakebite, insect stings, tick bites, heat and cold reactions, and dehydration. Explain to your counselor why a surveyor should be able to identify the poisonous plants and poisonous animals that are found in your area.



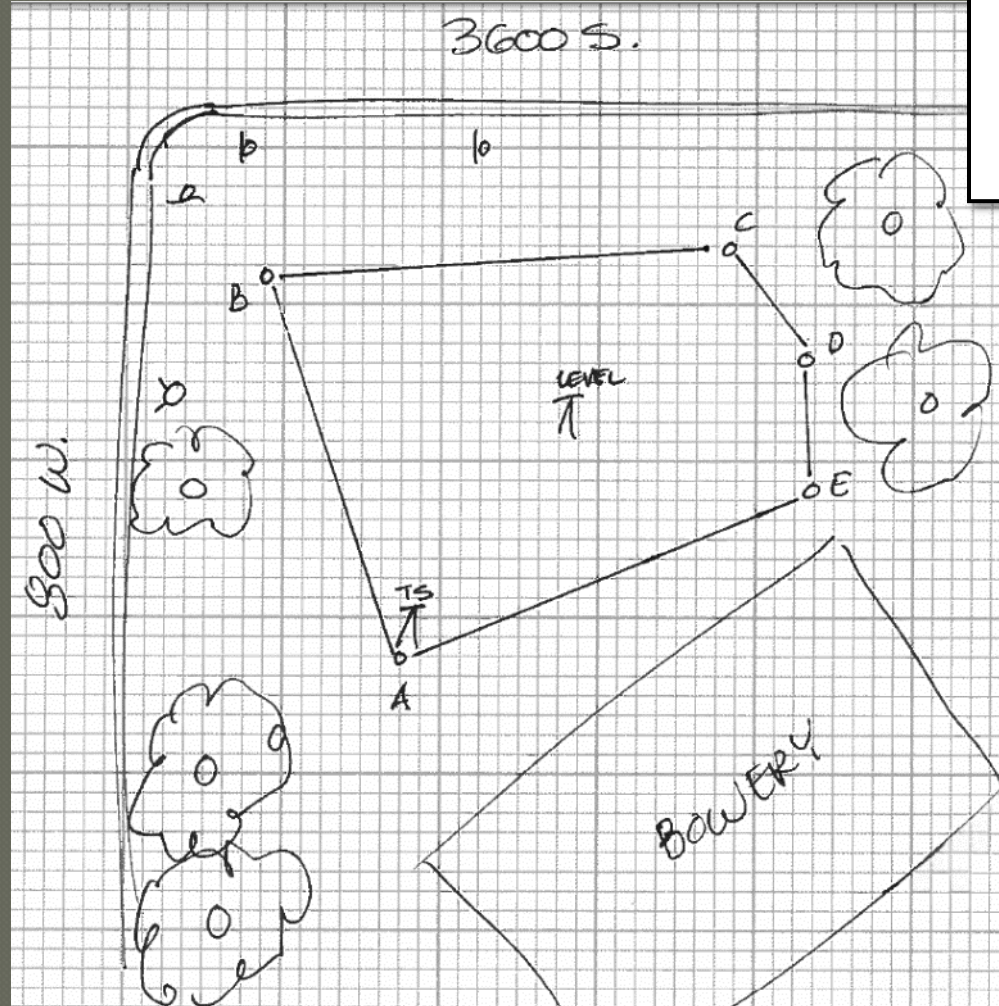
5 sided traverse

- Find and mark the corners of a five-sided lot that has been laid out by your counselor to fit the land available. Set an instrument over each of the corners and record the angle turned between each line and the distance measured between each corner, as directed by your counselor. With the assistance of the counselor, compute the error of closure from the recorded notes. The error of closure must not be more than 5 feet. From the corners, take compass readings or turn angles to trees, shrubs, and rocks and measure to them. All measurements should be made using instruments, methods, and accuracies consistent with current technology.
- Since the equipment to be used in any surveying job is dependent on the accuracy needed, and five feet is pretty loose, most any technology can be employed. Exposing the scouts to a variety of gear is useful.
- Most effective setup seems to be compass and tape for up to three legs and total station or two for the remainder.
- Divide scouts into crews of two to three scouts.
- All lines and azimuths/angles can be measured by each boy, crew can average measurements.



Leveling Exercise

- Use one of the corner markers from requirement 2 as a benchmark with an assumed elevation of 100 feet. Using a level and rod, determine the elevation of the other four corner markers
- Crews rotate between total station, compass and tape, and level for large groups, for smaller groups do the leveling after



Discuss GPS

- Tell what GPS is; discuss with your counselor the importance of GPS and how it is changing the field of surveying.



Note Reduction

- With the assistance of the counselor, compute the error of closure from the recorded notes. The error of closure must not be more than 5 feet.
 - Average the results from all crews, throw out the bad measurements and do calculations as a group using averaged numbers.
- From the field notes gathered for requirement 2, draw to scale a map of your survey. Submit a neatly drawn copy.
 - Use graph paper, protractors, scales not needed
- Write a metes and bounds description for the five-sided lot in requirement 2.



Discussion

- Discuss the importance of surveying with a licensed surveyor. Also discuss the various types of surveying and mapping, and applications of surveying technology to other fields. Discuss career opportunities in surveying and related fields. Discuss qualifications and preparation for such a career.
 - The scouts are typically as excited about emerging [measuring] technologies as surveyors are. Talking about scanning, imaging or UAV's could help keep their attention.



Homework

- Get a copy of the deed to your property, or a piece of property assigned by your counselor, from the local courthouse or title agency.
- As an option, you could pull a deed and associated copies of search documents for the property you are meeting at and walk them through how you found that deed.



- The scouts should be made aware that this should be done before class if it is a one day event.
- A two day class can give procrastinators a second chance.

Sign off the scouts

- Have one of the surveyors helping sign off the scouts as having completed the badge and give out contact information to those earning partial credit.
 - This allows the more ambitious to contact you, or work with another counselor when they are ready to pass off the remainder.
- This will require a registered merit badge counselor, it is a simple process, however there are many UCLS members who are already registered and they could help with this.


Information for Applicant

- A merit badge application can be approved only by a registered merit badge counselor.
- You must have a buddy with you (Scout buddy system) at each meeting with the merit badge counselor.
- Turn in your approved application to your unit leader. You will be awarded the merit badge emblem and certificate at a suitable occasion.

Information for Counselor

- Merit badge applications must be signed in advance by the applicant's unit leader.
- The Scout must have his buddy (Scout buddy system) in attendance at all instructional sessions.
- You may not change any requirement, but you may share your knowledge or experience that will make the counseling more interesting and valuable.

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APPLICATION FOR MERIT BADGE

Name _____

Address _____

City _____


is a registered
☐ Boy Scout ☐ Varsity Scout ☐ Venturer
of _____ Troop, team, crew, ship No _____

District _____

Council _____

and is qualified to begin working for merit badge noted on the reverse side.

Date _____ Signature of unit leader _____



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The applicant has personally appeared before me and demonstrated to my satisfaction that he has met all requirements for the (please print)

Merit badge _____

Name of counselor _____

Address of counselor _____

City _____ ZIP code _____

Telephone number of counselor _____

Signature of counselor _____ Date _____

Checked and received: _____

Date _____ Initials _____

Certificate and badge presented _____ Date _____

Applicant will turn in this portion to his unit leader for record posting.

APPLICANT'S RECORD

Name _____

has given me his completed application for the _____

Merit badge

Completed on _____ / _____ / _____ by _____

Date

Signature of counselor _____

Signature of unit leader _____

NOTE TO BOY SCOUT, VARSITY SCOUT, OR EXPLORER: Retain this copy for your permanent records.

COUNSELOR'S RECORD

Applicant _____

☐ Troop ☐ Team ☐ Post Unit number _____

Merit badge

Date completed: _____ / _____ / _____

Remarks: _____

It is suggested that the counselor keep this record for at least 1 year in case any question is raised later in regard to this award.