

# MERIT BADGE SERIES



# SURVEYING



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# Requirements

1. 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.
2. 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. 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.
3. From the field notes gathered for requirement 2, draw to scale a map of your survey. Submit a neatly drawn copy.
4. Write a metes and bounds description for the five-sided lot in requirement 2.
5. 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.

6. 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.
7. Tell what GPS is; discuss with your counselor the importance of GPS and how it is changing the field of surveying.
8. 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 the qualifications and preparation for such a career.



# Surveying Resources

## Scouting Literature

*Architecture, Computers, Drafting, Engineering, Landscape Architecture, and Orienteering* merit badge pamphlets.

Visit the Boy Scouts of America's official retail Web site at <http://www.scoutstuff.org> for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

This merit badge pamphlet touches only briefly on a very complex subject. Most of the details of instruments and methods are left to your merit badge counselor. If you have further interest in surveying, ask your counselor to help you learn more about it or to refer you to books that match your interest and background in mathematics.

Surveying changes so rapidly that most books soon become obsolete. If you borrow a surveying book from a library, check the date of publication. If the book is more than a few years old, portions of it probably are obsolete. After your counselor, other sources of

information include your local or state library, college or university department of surveying or civil engineering, a local professional surveyor, a technical or college bookstore, or the ACSM.

## American Congress on Surveying and Mapping

6 Montgomery Village Ave., Suite 403  
Gaithersburg, MD 20879  
Telephone: 240-632-9716  
Web site: <http://www.acsm.net>

## National Society of Professional Surveyors

6 Montgomery Village Ave., Suite 403  
Gaithersburg, MD 20879  
Telephone: 240-632-9716  
Web site: <http://www.nspsmo.org>

## Topozone.com

73 Princeton St., Suite 305  
North Chelmsford, MA 01863  
Web site: <http://www.topozone.com>

## U.S. Geological Survey

USGS National Center  
12201 Sunrise Valley Drive  
Reston, VA 20192  
Telephone: 703-648-4000  
Web site: <http://www.usgs.gov>