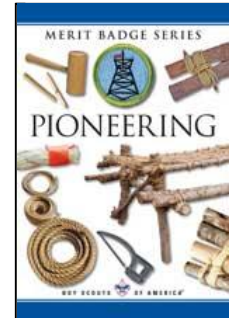


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Pioneering—the knowledge of ropes, knots, and splices along with the ability to build rustic structures by lashing together poles and spars—is among the oldest of Scouting's skills. Practicing rope use and completing projects with lashings also allow Scouts to connect with past generations, ancestors who used many of these skills as they sailed the open seas and lived in America's forests and prairies.

## Requirements

1. Do the following:
  - a. Explain to your counselor the most likely hazards you might encounter while participating in pioneering activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
  - b. Discuss the prevention of, and first-aid treatment for, injuries and conditions that could occur while working on pioneering projects, including cuts, scratches, insect bites and stings, rope burns, hypothermia, dehydration, heat exhaustion, heatstroke, sunburn, and falls.
2. Do the following:
  - a. Successfully complete Tenderfoot requirements 4a and 4b and First Class requirements 7a, 7b, and 8a. (These are the rope-related requirements.)
  - b. Tie the following: square knot, bowline, sheepshank, sheet bend, and roundturn with two half hitches.
  - c. Demonstrate the following: tripod and round lashings.
3. Explain why it is useful to be able to throw a rope, then demonstrate how to coil and throw a 40-foot length of 1/4- or 3/8-inch rope. Explain how to improve your throwing distance by adding weight to the end of your rope.
4. Explain the differences between synthetic ropes and natural-fiber ropes. Discuss which types of rope are suitable for pioneering work and why. Include the following in your discussion: breaking strength, safe working loads, and the care and storage of rope.
5. Explain the uses for the back splice, eye splice, and short splice. Using 1/4 - or 3/8-inch three-stranded rope, demonstrate how to form each splice.
6. Using a rope-making device or machine, make a rope at least 6 feet long consisting of three strands, each having three yarns.
7. Build a scale model of a signal tower or a monkey bridge. Correctly anchor the model using either the 1-1-1 anchoring system or the log and stake anchoring method. Describe the design of your project and explain how the anchoring system works.
8. Demonstrate the use of a rope tackle by lifting a weight of 25 pounds and pulling a log at least 6 inches in diameter and 6 feet long with the tackle. Use the tackle to put tension on a line. Explain the advantages and limitations of using a rope tackle. In your explanation, describe the potential damage that friction can do to a rope.
9. By yourself, build an A-trestle OR X-trestle OR H-trestle using square and diagonal lashings. Explain the application of the trestle you build. Demonstrate how to tie two spars together using a shear lashing.
10. With a group of Scouts OR on your own, select a pioneering project and get your counselor's approval before you begin building. Your project must not result in anyone reaching a height of greater than 6 feet off the ground. With your counselor's guidance, create a rough sketch of the project. Make a list of the ropes and spars needed, then build the project. (Note: This requirement may be done at summer camp, at district or council events, or on a troop camp outing.)



*Pioneering*  
BSA Supply No. 35931

## Resources

### Scouting Literature

*Boy Scout Handbook; Guide to Safe Scouting; Knots and How to Tie Them; Camping, Climbing, First Aid, Model Design and Building, Textile, and Woodwork* merit badge pamphlets

### Books

- 📖 Ashley, Clifford W. *The Ashley Book of Knots*. Doubleday, 1976.
- 📖 Biddlecombe, George. *The Art of Rigging*. Dover, 1990.
- 📖 Bigon, Mario, and Guido Regazzoni. *The Morrow Guide to Knots*. William Morrow, 1988.
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- 📖 *The Ultimate Encyclopedia of Knots & Ropework*. Lorenz Books, 1999.
- 📖 Day, Cyrus Lawrence. *The Art of Knotting and Splicing*. Naval Institute Press, 1986.
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- 📖 Pawson, Des. *Handbook of Knots: Expanded Edition*. DK Publishing, 2004.
- 📖 *Knot Craft: 28 Ropework Projects*. Paradise Cay, 2004.
- 📖 *Pocket Guide to Knots & Splices*. Chartwell Books, 2001.
- 📖 Perry, Gordon. *Knots: A Practical Step-by-Step Guide to Tying Over 100 Knots*. Barnes & Noble Books, 2002.
- 📖 Salvadori, Mario; Saralinda Hooker; and Christopher Ragus. *The Art of Construction: Projects and Principles for Beginning Engineers and Architects*. Chicago Review Press, 1990.
- 📖 Smith, Hervey Garrett. *The Arts of the Sailor: Knotting, Splicing and Ropework*. Dover, 1990.
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- 📖 Toghil, Jeff. *Knots and Splices*. Sheridan House, 1998.
- 📖 Toss, Brion. *The Complete Rigger's Apprentice: Tools and Techniques for Modern and Traditional Rigging*. McGraw-Hill, 1997.