

MERIT BADGE SERIES



PIONEERING



BOY SCOUTS OF AMERICA®

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"Enhancing our youths' competitive edge through merit badges"



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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 rope splinters, rope burns, cuts, scratches, insect bites and stings, hypothermia, dehydration, heat exhaustion, heatstroke, sunburn, and falls.
2. Do the following:
 - a. Demonstrate the basic and West Country methods of whipping a rope. Fuse the ends of a rope.
 - b. Demonstrate how to tie the following knots: clove hitch, butterfly knot, roundturn with two half hitches, rolling hitch, water knot, carrick bend, sheepshank, and sheet bend.
 - c. Demonstrate and explain when to use the following lashings: square, diagonal, round, shear, tripod, and floor lashing.
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 $\frac{1}{4}$ - or $\frac{3}{8}$ -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 $\frac{1}{4}$ - or $\frac{3}{8}$ -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. Whip the ends.
7. Explain the importance of effectively anchoring a pioneering project. Describe to your counselor the 1-1-1 anchoring system and the log-and-stake anchoring methods.
8. With the approval of your counselor, demonstrate and use a rope tackle. Be sure the rope tackle is secured properly. Explain the advantages and limitations of using a rope tackle. Describe the potential damage that friction can do to a rope.

All pioneering projects constructed for this merit badge must comply with height standards as outlined in the *Guide to Safe Scouting*.

9. By yourself, build a trestle using square and diagonal lashings. Explain why trestles are used when constructing pioneering projects.
10. With the approval of your counselor and using appropriate lashings and pioneering techniques, build and use one full-size pioneering project from either group A or group B. Your project must comply with the requirements of the *Guide to Safe Scouting*.

Group A: Tower **OR** bridge

Anchor your project as appropriate and necessary. Explain how your anchoring system works. Group A projects may be worked on in a group and with others.

Group B: Camp chair **OR** camp table

Group B projects must be worked on individually.

Pioneering Resources

Scouting Literature

Boy Scout Handbook; Guide to Safe Scouting; Deck of First Aid; Emergency First Aid pocket guide; Basic Illustrated Wilderness First Aid; Be Prepared First Aid Book; Basic Illustrated Outdoor Knots; Deck of Knots; Knots and How to Tie Them; Camping, Climbing, First Aid, Model Design and Building, Textile, and Woodwork merit badge pamphlets

Visit the Boy Scouts of America's official retail website (with your parent's permission) at <http://www.scoutstuff.org> for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

Books

- Ashley, Clifford W. *The Ashley Book of Knots*. Doubleday, 1976.
- Bigon, Mario, and Guido Regazzoni. *The Morrow Guide to Knots*. William Morrow, 1988.
- Budworth, Geoffrey. *The Ultimate Book of Everyday Knots*. Skyhorse Publishing, 2012.
- Budworth, Geoffrey. *The Ultimate Encyclopedia of Knots and Ropework*. Southwater, 2010.
- Jarman, Colin. *The Knot Tying Bible: Climbing, Camping, Sailing, Fishing, Everyday*. Firefly Books, 2013.
- Pawson, Des. *Handbook of Knots*. DK Publishing, 2004.
- Pawson, Des. *Knot Craft: 35 Ropework Projects*. Paradise Cay, 2011.
- Pawson, Des. *Knots: The Complete Visual Guide*. DK, 2012.
- Penn, Randy. *The Handy Box of Knots: Useful Knots for Every Situation, Indoors and Out*. Sterling Innovation, 2008.
- Perry, Gordon. *Knots*. Whitecap Books, 2006.
- Perry, Gordon. *Knots: A Practical Step-by-Step Guide to Tying Over 100 Knots*. Metro Books, 2002.
- Salvadori, Mario. *The Art of Construction: Projects and Principles for Beginning Engineers & Architects*. Chicago Review Press, 2000.
- Sweet, John. *Scout Pioneering*. Scout Association, 1974.
- Toghill, Jeff. *Knots & Splices*. Sheridan House, 1998.

Toss, Brion. *The Complete Rigger's Apprentice: Tools and Techniques for Modern and Traditional Rigging*. International Marine/Ragged Mountain Press, 2016.

Online Resources

First Aid merit badge pamphlet, <http://boyslife.org/merit-badges/first-aid-merit-badge/>

Guide to Safe Scouting, <http://www.scouting.org/HealthandSafety/GSS.aspx>

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