



# Pioneering

## Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet.

The work space provided for each requirement should be used by the Scout to make notes for discussing the item with his counselor, not for providing the full and complete answers. Each Scout must do each requirement.

No one may add or subtract from the official requirements found in **Boy Scout Requirements** (Pub. 33216 – SKU 34765).

The requirements were last issued or revised in 2006 • This workbook was updated in March 2012.

Scout's Name: \_\_\_\_\_ Unit: \_\_\_\_\_

Counselor's Name: \_\_\_\_\_ Counselor's Phone No.: \_\_\_\_\_

<http://www.USScouts.Org> • <http://www.MeritBadge.Org>

Please submit errors, omissions, comments or suggestions about improving this workbook to: [Workbooks@USScouts.org](mailto:Workbooks@USScouts.org)

1. Show that you know first aid for injuries or illness that could occur while working on pioneering projects, including minor cuts and abrasions, bruises, rope burns, blisters, splinters, sprains, heat and cold reactions, dehydration, and insect bites or stings.

Minor cuts and abrasions: \_\_\_\_\_

\_\_\_\_\_

Bruises: \_\_\_\_\_

\_\_\_\_\_

Rope burns: \_\_\_\_\_

\_\_\_\_\_

Blisters: \_\_\_\_\_

\_\_\_\_\_

Splinters: \_\_\_\_\_

\_\_\_\_\_

Sprains: \_\_\_\_\_

\_\_\_\_\_

Heat reactions: \_\_\_\_\_

\_\_\_\_\_

Cold reactions: \_\_\_\_\_

\_\_\_\_\_

Dehydration: \_\_\_\_\_

\_\_\_\_\_

Insect bites or stings: \_\_\_\_\_

\_\_\_\_\_

2. Do the following:

a. Successfully complete Tenderfoot requirements 4a and 4b and First Class requirements 7a, 7b, and 7c. (These are the rope-related requirements.)

*Tenderfoot requirements 4a and 4b*

4a. Demonstrate how to whip and fuse the ends of a rope.

4b. Demonstrate that you know how to tie the following knots and tell what their uses are: two half hitches and the taut-line hitch

two half hitches \_\_\_\_\_  
\_\_\_\_\_

taut-line hitch \_\_\_\_\_  
\_\_\_\_\_

*First Class requirements 7a, 7b, and 8a*

7a. Discuss when you should and should not use lashings. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Then demonstrate tying the timber hitch and clove hitch and their use in square, shear, and diagonal lashings by joining two or more poles or staves together.

7b. Use lashing to make a useful camp gadget.

8a. Demonstrate tying the bowline knot and describe several ways it can be used. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Tie the following: square knot, bowline, sheepshank, sheet bend, and roundturn with two half hitches.

Square knot

Bowline

Sheepshank

Sheet bend

Roundturn with two half hitches

c. Demonstrate the following: tripod and round lashings.

Tripod lashing

Round 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 1/4- or 3/8-inch rope. \_\_\_\_\_

\_\_\_\_\_

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.

Synthetic ropes \_\_\_\_\_

\_\_\_\_\_

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.

Type of rope: \_\_\_\_\_

Why suitable: \_\_\_\_\_

Breaking strength \_\_\_\_\_

Safe working loads \_\_\_\_\_

Care & storage \_\_\_\_\_

Type of rope: \_\_\_\_\_

Why suitable: \_\_\_\_\_

Breaking strength \_\_\_\_\_

Safe working loads \_\_\_\_\_

Care & storage \_\_\_\_\_

Type of rope: \_\_\_\_\_

Why suitable: \_\_\_\_\_

Breaking strength \_\_\_\_\_

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Why suitable: \_\_\_\_\_

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Safe working loads \_\_\_\_\_

Care & storage \_\_\_\_\_

Type of rope: \_\_\_\_\_

Why suitable: \_\_\_\_\_

Breaking strength \_\_\_\_\_

Safe working loads \_\_\_\_\_

Care & storage \_\_\_\_\_

- 5. Explain the uses for the back splice, eye splice, and short splice.

Back splice: \_\_\_\_\_

\_\_\_\_\_

Eye splice: \_\_\_\_\_

\_\_\_\_\_

Short splice: \_\_\_\_\_

\_\_\_\_\_

Using 1/4- or 3/8-inch three-stranded rope, demonstrate how to form each splice.

Back splice

Eye splice

Short 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 rope tackle to lift 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, disadvantages, and limitations of using a rope tackle.

Advantages: \_\_\_\_\_

Disadvantages: \_\_\_\_\_

Limitations: \_\_\_\_\_

\_\_\_\_\_

In your explanation, describe the potential damage that friction can do to a rope. \_\_\_\_\_

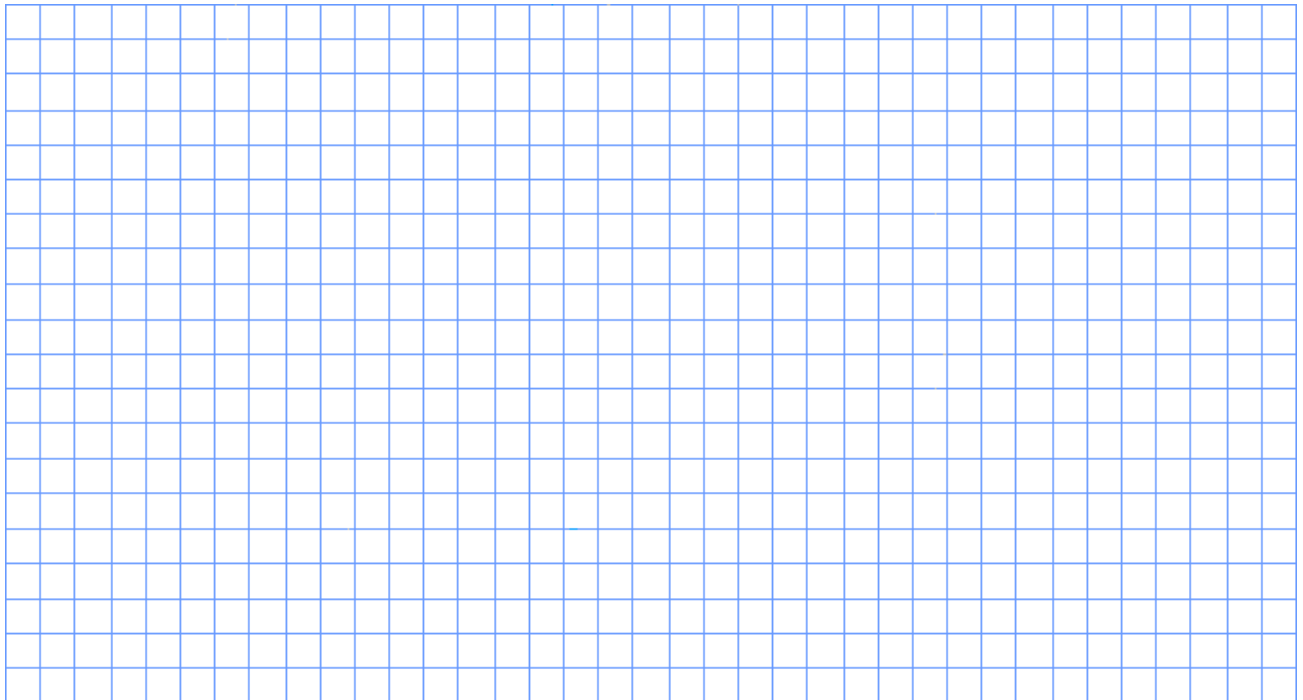
\_\_\_\_\_

- 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. With your counselor's guidance, create a rough sketch of the project.





## Important excerpts from the [‘Guide To Advancement’](#), No. 33088:

Effective January 1, 2012, the ‘Guide to Advancement’ (which replaced the publication ‘Advancement Committee Policies and Procedures’) is now the *official* Boy Scouts of America source on advancement policies and procedures.

- **[ Inside front cover, and 5.0.1.4 ] — Unauthorized Changes to Advancement Program**  
***No council, committee, district, unit, or individual has the authority to add to, or subtract from, advancement requirements.***  
(There are limited exceptions relating only to youth members with disabilities. For details see section 10, “Advancement for Members With Special Needs”.)
- **[ Inside front cover, and 7.0.1.1 ] — The [‘Guide to Safe Scouting’](#) Applies**  
Policies and procedures outlined in the ‘Guide to Safe Scouting’, No. 34416, apply to all BSA activities, including those related to advancement and Eagle Scout service projects. [Note: Always reference the online version, which is updated quarterly.]
- **[ 7.0.3.1 ] — The Buddy System and Certifying Completion**  
Youth members must not meet one-on-one with adults. Sessions with counselors must take place where others can view the interaction, or the Scout must have a buddy: a friend, parent, guardian, brother, sister, or other relative —or better yet, another Scout working on the same badge— along with him attending the session. When the Scout meets with the counselor, he should bring any required projects. If these cannot be transported, he should present evidence, such as photographs or adult certification. His unit leader, for example, might state that a satisfactory bridge or tower has been built for the Pioneering merit badge, or that meals were prepared for Cooking. If there are questions that requirements were met, a counselor may confirm with adults involved. Once satisfied, the counselor signs the blue card using the date upon which the Scout completed the requirements, or in the case of partials, initials the individual requirements passed.
- **[ 7.0.3.2 ] — Group Instruction**  
It is acceptable—and sometimes desirable—for merit badges to be taught in group settings. This often occurs at camp and merit badge midways or similar events. Interactive group discussions can support learning. The method can also be attractive to “guest experts” assisting registered and approved counselors. Slide shows, skits, demonstrations, panels, and various other techniques can also be employed, but as any teacher can attest, not everyone will learn all the material.

There must be attention to each individual’s projects and his fulfillment of *all* requirements. We must know that every Scout — actually and *personally*— completed them. If, for example, a requirement uses words like “show,” “demonstrate,” or “discuss,” then every Scout must do that. It is unacceptable to award badges on the basis of sitting in classrooms *watching* demonstrations, or remaining silent during discussions. Because of the importance of individual attention in the merit badge plan, group instruction should be limited to those scenarios where the benefits are compelling.

- **[ 7.0.3.3 ] — Partial Completions**  
Scouts need not pass all requirements with one counselor. The Application for Merit Badge has a place to record what has been finished — a “partial.” In the center section on the reverse of the blue card, the counselor initials for each requirement passed. In the case of a partial completion, he or she does not retain the counselor’s portion of the card. A subsequent counselor may choose not to accept partial work, but this should be rare. A Scout, if he believes he is being treated unfairly, may work with his Scoutmaster to find another counselor. An example for the use of a signed partial would be to take it to camp as proof of prerequisites. Partials have no expiration except the 18th birthday.