



Whitewater

Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33216. Each Scout must do each requirement. Merit Badge Workbooks and more: [Online Resources](#). Send comments to the workbook developer: craig@craiglincoln.com. Requirements revised: 2006, Workbook updated: May 2009.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Ph #: _____

1. Do the following:

a. Review with your counselor the first aid for injuries or illnesses that could occur while working on the Whitewater merit badge, including hypothermia, _____

heat reactions, _____

dehydration, _____

insect stings, _____

blisters, _____

bruises, _____

cuts, _____

and shoulder dislocation. _____

b. Identify the conditions that must exist before performing cardiopulmonary resuscitation (CPR) on a person.

Explain how such conditions are recognized. _____

c. Demonstrate proper technique for performing CPR using a training device approved by your counselor. _____

2. Do the following:

a. Review and compare BSA Safety Afloat _____

and the American Whitewater safety guidelines and demonstrate your understanding of these principles by answering questions from your counselor. _____

b. Identify and explain the use and importance of safety equipment on moving water. _____

Include in your explanation a discussion about throw ropes, _____

whistles, _____

and how to choose and properly fit PFDs (personal flotation devices) _____

and helmets. _____

3. *Before doing requirements 4 through 13 earn the Canoeing merit badge if you will be using a canoe to earn this merit badge. If you will be using a kayak, earn the Kayaking BSA Award.*

4. Do ONE of the following:

- a. If you are completing these requirements as a tandem canoeist, **demonstrate** basic canoe-handling skills by completing the Scout gate test within 160 seconds while paddling tandem with a buddy. Then **demonstrate** the following strokes: cross forward, cross draw, bow pry, Duffek, high brace, and low brace, _____
- b. If you are completing these requirements as a solo canoeist, **demonstrate** basic solo canoe-handling skills by completing the Scout gate test within 160 seconds. Then **demonstrate** the following strokes: cross forward, cross draw, stern pry, Duffek, high brace, and low brace. _____
- c. If you are using a kayak to complete these requirements, **demonstrate** basic kayak-handling skills by completing the Scout gate test within 160 seconds. **Demonstrate** the following strokes: Duffek, high brace, low brace, and sculling draw. Then do the following:
 - 1. Move the kayak forward in a reasonably straight line for 10 yards. _____
 - 2. Move the kayak sideways to the right and to the left. _____
 - 3. Pivot 360 degrees to the right and left. _____
 - 4. Stop the kayak. _____
- 5. Do the following:
 - a. Explain the importance of scouting before committing to running a rapid, and discuss good judgment when evaluating a stretch of river or a particular rapid. _____

 - b. Explain the terms downstream V, _____
 riffle, _____

 strainer, _____

 eddy, _____

 eddy line, _____

 pillow, _____

 ledge, _____

 bend, _____

shallows, _____

falls, _____

low-head dam, _____

current, _____

rock, _____

drop, _____

horizon line, _____

wave, _____

standing wave, _____

hydraulic, _____

and sleeper. _____

c. Explain how to scout and read a river while ashore and while afloat, and discuss the importance of hazard recognition. _____

d. *Demonstrate* your ability to read the river where you are practicing and demonstrating your whitewater skills. _____

6. Explain the International Scale of River Difficulty

and apply the scale to the stretch of river where you are practicing and demonstrating your whitewater skills.

Identify the specific characteristics of the river that are factors in your classification according to the International Scale. _____

7. Explain the importance of communication during every whitewater outing. _____

Explain and then demonstrate using the following river signals:

"Run right," _____

"Run left," _____

"Run down the center," _____

"Stop," _____

"Are you OK?" _____

and "Help!" _____

8. Do the following:

a. Explain the differences between flatwater _____

and whitewater canoes; _____

identify the advantages and special uses for kayaks and decked canoes in running water. _____

Identify the different materials used in modern whitewater canoe construction and the advantages and disadvantages of each.

b. Describe the various types of kayaks and how they differ in design, materials, and purpose.

c. Identify the advantages and special uses for kayaks and decked canoes in moving water.

d. Discuss the construction, _____

safety, _____

and functional features of paddles used in whitewater activities. _____

9. Discuss the personal and group equipment necessary for a safe whitewater outing and how and why it is used.

Personal _____

Group _____

Explain how to pack and protect these items. _____

10. Wearing the proper personal flotation device (PFD) and being appropriately dressed for the weather and water conditions, **perform** the following skills in moving water in a properly equipped whitewater craft of your choice (tandem canoe, solo canoe, or solo kayak). If a tandem canoe is used, the skills must be **demonstrated** from both the bow and stern positions.

- a. Launch and land. _____
- b. Paddle forward in a straight line. _____
- c. Backpaddle. _____
- d. Sideslip, both sides. _____
- e. Ferry upstream and downstream. _____
- f. Eddy turn. _____
- g. Peel out. _____

11. Explain and demonstrate:

- a. Self-rescue and procedures when capsized in moving water, including a wet exit if necessary _____

- b. Safe rescue of others in various whitewater situations using a throw rope. _____

- c. Portaging - when and how to do it. _____

- d. The whitewater buddy system using at least three persons and three craft. _____

12. Discuss the use of inflatable boats on moving water. _____

Discuss the use of inflatable rafts on moving water. _____

In your discussion, explain the special safety precautions that should be taken when using an inflatable raft _____

and the risks of "tubing" on moving water. _____

13. Participate in a whitewater trip using either a canoe or kayak on a Class I or Class II river. _____

Help to prepare a written plan specifying the route, _____

schedule, _____

equipment, _____

safety precautions, _____

and emergency procedures. _____

Determine local rules and obtain permission from landowners and land managers in advance. _____

Explain what steps you have taken to comply with BSA Safety Afloat _____

and the American Whitewater safety guidelines. _____

Execute the plan with others. _____

Online Resources: *(Use any Internet resource with caution and only with your parent's or guardian's permission.)*

- Boy Scouts of America:** ▶ scouting.org ▶ [Guide to Safe Scouting](#) ▶ [Age-Appropriate Guidelines](#) ▶ [Safe Swim Defense](#)
- ▶ [Scout](#) ▶ [Tenderfoot](#) ▶ [Second Class](#) ▶ [First Class](#) ▶ [Rank Videos](#) ▶ [Safety Afloat](#)

Boy Scout Merit Badge Workbooks: usscouts.org -or- meritbadge.org **Merit Badge Books:** www.scoutstuff.org

Requirement Resources

These resources and much more are at: <http://meritbadge.org/wiki/index.php/Whitewater>

1. First Aid:**1a.** [Hypothermia](#) - [Heat Reactions](#) - [Dehydration](#) - [Insect Stings](#) - [Blisters](#) - [Bruises](#) - [Cuts](#) - [Shoulder Dislocation](#) **1b, 1c.** [CPR](#)

- Your handbook is your primary reference. See [First Aid Skills](#) for step-by-step instructions and lesson video links.
- **See also:** [First Aid Merit Badge Pamphlet](#) - [First Aid Kit](#) - [Emergency Kit](#) - [Guide to Safe Scouting](#) - [Physcial](#)

2a. The [Safety Afloat](#) materials are included in the [Whitewater Worksheet](#).

- [BSA American Whitewater Guidelines](#) - [American Whitewater safety guidelines](#)

2b. [PFD](#)

- Your handbook is your primary reference. See [Swimming Skills](#) for step-by-step instructions and lesson video links.
- **See also:** [Swimming](#) & [Lifesaving](#) Merit Badge Pamphlets - [Guide to Safe Scouting](#) - [Safe Swim Defense](#) - [Safety Afloat](#)

3. [Canoeing Merit Badge](#) - [Kayaking BSA](#)**4-13**

- [Whitewater River Database](#) - [Terminology](#) - [More terms](#) - [River Classification](#) - *[River Signals](#)
- [Canoe & Kayak Basics](#); [Canoeing Basics](#); [PDFs](#) - [Paddles](#) - [Getting In/Out](#) - [Paddling](#) - [On The Water](#)
- [ExpertVillage.com Whitewater Lesson Videos](#); [Whitewater Canoeing Lesson Videos](#) - [Safety](#) - [Gear](#) - [Solo](#)
- [Whitewater Kayaking Lesson Videos](#) - [Terminology](#) - [More Terminology](#) - [Kayaking Basics](#) - [Gear & Terminology](#) - [Kayaking Basics](#) - [Gear](#) - [Playing in Holes](#) - [Stroke Tips](#)

General Resources

American Whitewater Safety Code: <http://www.americanwhitewater.org/content/Wiki/do-op/id/safety:start>

Int. Scale of River Difficulty: http://en.wikipedia.org/wiki/International_Scale_of_River_Difficulty [AWA Text Version](#)

Canoe & Kayak: <http://www.canoekayak.com>

Paddler: <http://www.paddlermagazine.com>

American Canoe Association: <http://www.acanet.org>

American Whitewater: <http://www.americanwhitewater.org>

USA Canoe/Kayak: <http://www.usack.org>

United States Canoe Association: <http://www.uscanoe.com>

SAFETY AFLOAT

Safety Afloat has been developed to promote boating and boating safety and to set standards for safe unit activity afloat. Before a BSA group may engage in an excursion, expedition, or trip on the water (canoe, raft, sailboat, motorboat, rowboat, floating in an inner tube, or other craft), adult leaders for such activity must complete Safety Afloat Training, No. 34159, have a commitment card, No. 34242, with them, and be dedicated to full compliance with all nine points of Safety Afloat.

1. Qualified Supervision

All activity afloat must be supervised by a mature and conscientious adult age 21 or older who understands and knowingly accepts responsibility for the well-being and safety of the children in his or her care, who is experienced and qualified in the particular watercraft skills and equipment involved in the activity, and who is committed to compliance with the nine points of BSA Safety Afloat. One such supervisor is required for each 10 people, with a minimum of two adults for any one group. At least one supervisor must be age 21 or older, and the remaining supervisors must be age 18 or older. All supervisors must complete BSA Safety Afloat and Safe Swim Defense training and rescue training for the type of watercraft to be used in the activity, and at least one must be trained in CPR. It is strongly recommended that all units have at least one adult or older youth member currently trained as a BSA Lifeguard to assist in the planning and conducting of all activity afloat. For Cub Scouts: The ratio of adult supervisors to participants is one to five.

2. Physical Fitness

All persons must present evidence of fitness by a complete health history from a physician, parent, or legal guardian. Adjust all supervision, discipline, and protection to anticipate any risks associated with individual health conditions. In the event of any significant health conditions, a medical evaluation by a physician should be required by the adult leader.

3. Swimming Ability

A person who has not been classified as a "swimmer" may ride as a passenger in a rowboat or motorboat with an adult swimmer, or in a canoe, raft, or sailboat with an adult who is trained as a lifeguard or a lifesaver by a recognized agency. In all other circumstances, the person must be a swimmer to participate in an activity afloat. Swimmers must pass this test:

Jump feetfirst into water over your head. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy resting backstroke. The 100 yards must be swum continuously and include at least one sharp turn. After completing the swim, rest by floating. This qualification test should be renewed annually.

4. Personal Flotation Equipment

Properly fitted U.S. Coast Guard-approved personal flotation devices (PFDs) must be worn by all persons engaged in activity on the open water (rowing, canoeing, sailing, boardsailing, motorboating, waterskiing, rafting, tubing, kayaking, and surfboarding). Type II and III PFDs are recommended.

5. Buddy System

All activity afloat necessitates using the buddy system. Not only must every individual have a buddy, but every craft should have a "buddy boat" when on the water.

6. Skill Proficiency

All participants in activity afloat must be trained and experienced in watercraft handling skills, safety, and emergency procedures. (a) For unit activity on white water, all participants must complete special training by a BSA Aquatics Instructor or qualified whitewater specialist. (b) Powerboat operators must be able to meet requirements for the Motorboating merit badge or equivalent. (c)

Except for whitewater and powerboat operation as noted above, either a minimum of three hours' training and supervised practice or meeting requirements for "basic handling tests" is required for all float trips or open-water excursions using unpowered craft. (d) Motorized personal watercraft, such as the Jet Ski? and SeaDoo?, are not authorized for use in Scouting aquatics, and their use should not be permitted in or near BSA program areas.

For Cub Scouts: Canoeing, kayaking, rowing, and rafting for Cub Scouts (including Webelos Scouts) are to be limited to council/district events on flat water ponds or controlled lake areas free of powerboats and sailboats. Prior to recreational canoeing and kayaking, Cub Scouts are to be instructed in basic handling skills and safety practices.

7. Planning

Float Plan — Obtain current maps and information about the waterway to be traveled. Know exactly where the unit will "put in" and "pull out" and what course will be followed. Travel time should be estimated generously. Review the plan with others who have traveled the course recently.

Local Rules — Determine which state and local regulations are applicable, and follow them. Get written permission to use or cross private property.

Notification — File the float plan with parents or participants and a member of the unit committee. File the float plan with the local council office when traveling on running water. Check in with all those who should be notified when returning.

Weather — Check the weather forecast just before setting out, and keep an alert weather eye. Bring all craft ashore when rough weather threatens.

Contingencies — Planning must identify possible emergencies and other circumstances that could force a change of plans. Appropriate alternative plans must be developed for each.

For Cub Scouts: Cub Scout canoeing, kayaking, rowing, and rafting do not include "trips" or "expeditions" and are not to be conducted on running water (i.e., rivers or streams); therefore, some procedures are inapplicable. Suitable weather requires clear skies, no appreciable wind, and warm air and water.

8. Equipment

All equipment must be suited to the craft, to water conditions, and to the individual; must be in good repair; and must satisfy all state and federal requirements. Spare equipment or repair materials must be carried. Appropriate rescue equipment must be available for immediate use.

9. Discipline

All participants should know, understand, and respect the rules and procedures for safe unit activity afloat. The applicable rules should be presented and learned prior to the outing, and should be reviewed for all participants at the water's edge just before the activity begins. When Scouts know and understand the reasons for the rules, they will observe them. When fairly and impartially applied, rules do not interfere with the fun. Rules for safety, plus common sense and good judgment, keep the fun from being interrupted by tragedy.

Note: For cruising vessels (excluding rowboats, canoes, kayaks, and rafts, but including sailboats and powerboats greater than 20 feet long) used in adult-supervised unit activities by a chartered Venturing crew/ship specializing in watercraft operations, or used in adult-supervised program activity in connection with any high-adventure program or other activity under the direct sponsorship and control of the National Council, the standards and procedures in the Sea Scout Manual may be substituted for the Safety Afloat standards.