

- b Review with your counselor the prevention, symptoms, and first aid treatment for the following injuries or illnesses that could occur while participating in whitewater activities including cold-water shock; hypothermia; head, neck, and back injuries; heat-related illnesses; sunburn; dehydration; blisters; bruises; cuts; sprains and strains; shoulder dislocation; and submersion injuries.

Cold-water shock:

Hypothermia:

Head injuries:

Neck injuries:

Back injuries:

Heat-related illnesses:

Sunburn:

Dehydration

Blisters:

Bruises

Cuts

Sprains

Strains:

Shoulder dislocation:

Submersion injuries:

- c. Discuss with your counselor the BSA Safety Afloat policy and the American Whitewater safety guidelines, including the use of helmet and life jackets.

2. Do the following:

- a. Demonstrate understanding of the following river features by drawing lines to show the flow of water: upstream V, downstream V, eddy with an eddy line, ledge, river bend, current at different depths, drop, horizon line, and hydraulic.

Upstream V

Downstream V

Eddy with an eddy line:

Ledge

River bend

Current at different depths

Drop

Horizon line

Hydraulic:

- b. Describe how waves form including standing waves and wave trains.

- c. Explain how to tilt or edge the boat without leaning your body

1. When entering and exiting an eddy.

2. When ferrying in downstream and upstream directions.

- d. Explain when, why, and how you should scout a river while ashore and while on the river and when you should portage your boat.

- ☐ 3. Before doing requirements 4 through 12, 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 merit badge.
- ☐ Earn the Canoeing merit badge ☐ Earn the Kayaking merit badge
- Then do the following:
- ☐ a If you will be using a canoe to earn this merit badge, demonstrate strokes and maneuvers from the Canoeing merit badge to the satisfaction of your merit badge counselor.
- OR
- ☐ b If you will be using a kayak to earn this merit badge, demonstrate strokes and maneuvers from the Kayaking merit badge to the satisfaction of your merit badge counselor.
4. Do ONE of the following:
- ☐ a. If you are completing these requirements as a tandem canoeist, perform the following on calm water:
- ☐ 1. Demonstrate the following strokes in the bow: cross forward, bow draw, cross bow draw, bow pry, and sculling draw.
- ☐ cross forward ☐ bow pry
- ☐ bow draw ☐ sculling draw.
- ☐ cross bow draw
- ☐ 2. Demonstrate the following strokes in the stern: stern draw, stern pry, sculling draw, and forward with stern pry.
- ☐ stern draw ☐ sculling draw
- ☐ stern pry ☐ forward with stern pry
- ☐ 3. Demonstrate a high brace, low brace, and righting pry.
- ☐ high brace
- ☐ low brace
- ☐ righting pry
- OR
- ☐ b If you are completing these requirements as a solo canoeist, perform the following on calm water:
- ☐ 1. Demonstrate the following strokes: cross forward, bow draw, cross bow draw, stern draw, pry, stern pry, sculling draw, and forward with stern pry.
- ☐ cross forward ☐ pry
- ☐ bow draw ☐ stern pry
- ☐ cross bow draw ☐ sculling draw
- ☐ stern draw ☐ forward with stern pry
- ☐ 2. Demonstrate a high brace, low brace, and a righting pry.
- ☐ high brace
- ☐ low brace
- ☐ righting pry
- OR
- ☐ c If you are completing these requirements as a solo kayaker, perform the following on calm water:
- ☐ 1. Demonstrate the following strokes: bow draw, rudder, and sculling draw.
- ☐ bow draw
- ☐ rudder
- ☐ sculling draw
- ☐ 2. Demonstrate a high brace and low brace.
- ☐ high brace
- ☐ low brace

5. Do the following:

- a. Explain the International Scale of River Difficulty and apply the scale to the stretch of river approved by your counselor.

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

- c. Discuss how the level of flow changes a river from one class to another and what effects different flow rates have on the features of a river and its hazards.

6. Explain the importance of communication during every whitewater outing.

Demonstrate knowledge and ability to use the following American Whitewater Universal River Signals, both visual and auditory: "Stop," "Are you OK?," "Help/emergency," "Run river right," "Run river left," and "All clear—come ahead."

☐ "Stop,"

☐ "Run river right,"

☐ "Are you OK?,"

☐ "Run river left,"

☐ "Help/emergency,"

☐ All clear—come ahead."

7. Do ONE of the following:

- ☐ a. If completing this merit badge in a canoe, describe the various types of canoes used on moving water and how they differ in design, materials, and purpose.

OR

- ☐ b. If completing this merit badge in a kayak, describe the various types of kayaks used on moving water and explain how they differ in design, materials, and purpose.

8. 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.

- ☐ 9. Demonstrate your ability to read a Class II section of river approved by your counselor. Describe the most desirable paths or lines of travel as well as alternative routes and options

Point out how to use the existing water features to your advantage, and explain how to best avoid the hazards present.

10. Wearing a proper life jacket 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.

- ☐ 1. Launch and land.
- ☐ 2. Paddle forward in a straight line at least 10 boat lengths.
- ☐ 3. Backpaddle in a straight line at least five boat lengths.
- ☐ 4. Ferry upstream from both sides of the river.
- ☐ 5. Ferry downstream from both sides of the river.
- ☐ 6. Eddy turn from both sides of an eddy.
- ☐ 7. Peel out from both sides of an eddy.

11. Explain and demonstrate the following to your counselor:

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

- b. Proper use of a throw rope to rescue a swimmer in whitewater

- c. Proper technique for receiving a throw rope as a swimmer

- d. Portaging—where portaging would be appropriate, and when and how to do it

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

- ☐ 12. Participate in one or more whitewater trips using either a canoe or kayak on a Class I and/or Class II river. The trip(s) must involve at least six hours of paddling time. For each trip:

- a. Help to prepare a written plan, specifying the route (put-ins and takeouts), schedule, equipment, safety precautions, and emergency procedures.

Route:

Schedule:

Equipment:

Safety
precautions:Emergency
procedures:

- ☐ b. Determine local rules and obtain permission from landowners and land managers in advance.
- c. Explain what steps you have taken to comply with BSA Safety Afloat and the American Whitewater safety guidelines.

- ☐ d. Show how to protect personal and group equipment from water and how to load and secure the containers in boats to be used in the trip. Execute the plans with other paddlers.
- e. Explain to your counselor how well your plans worked for each trip taken.

When working on merit badges, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088). Important excerpts from that publication can be downloaded from <http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf>.
You can download a complete copy of the *Guide to Advancement* from <http://www.scouting.org/filestore/pdf/33088.pdf>.

BSA groups shall use Safety Afloat for all boating activities. Adult leaders supervising activities afloat must have completed Safety Afloat training within the previous two years. Cub Scout activities afloat are limited to council or district events that do not include moving water or float trips (expeditions). Safety Afloat standards apply to the use of canoes, kayaks, rowboats, rafts, floating tubes, sailboats, motorboats (including waterskiing), and other small craft, but do not apply to transportation on large commercial vessels such as ferries and cruise ships. Parasailing (being towed airborne behind a boat using a parachute), kitesurfing (using a wakeboard towed by a kite), and recreational use of personal watercraft (small sit-on-top motorboats propelled by water jets) are not authorized BSA activities.

Safety Afloat training may be obtained from the BSA Online Learning Center at www.scouting.org, at council summer camps, and at other council and district training events. Confirmation of training is required on local and national tour permits for trips that involve boating. Additional guidance on appropriate skill levels and training resources is provided in the *Aquatics Supervision* guide available from council service centers.

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 wellbeing and safety of those in his or her care and who is trained in and committed to compliance with the nine points of BSA Safety Afloat. That supervisor must be skilled in the safe operation of the craft for the specific activity, knowledgeable in accident prevention, and prepared for emergency situations. If the adult with Safety Afloat training lacks the necessary boat operating and safety skills, then he or she may serve as the supervisor only if assisted by other adults, camp staff personnel, or professional tour guides who have the appropriate skills. Additional leadership is provided in ratios of one trained adult, staff member, or guide per 10 participants. For Cub Scouts, the leadership ratio is one trained adult, staff member, or guide per five participants. At least one leader must be trained in first aid including CPR. Any swimming done in conjunction with the activity afloat must be supervised in accordance with BSA Safe Swim Defense standards. It is strongly recommended that all units have at least one adult or older youth member currently trained in BSA Aquatics Supervision: Paddle Craft Safety to assist in the planning and conduct of all activities afloat.

2. Personal Health Review

A complete health history is required of all participants as evidence of fitness for boating activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. Supervision and protection should be adjusted to anticipate any potential risks associated with individual health conditions. For significant health conditions, the adult supervisor should require an examination by a physician and consult with parent, guardian, or caregiver for appropriate precautions.

3. Swimming Ability

Operation of any boat on a float trip is limited to youth and adults who have completed the BSA swimmer classification test. Swimmers must complete the following test, which should be administered annually.

Jump feetfirst into water over the head in depth. Level off and 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 completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.

For activity afloat, those not classified as a swimmer are limited to multiperson craft during outings or float trips on calm water with little likelihood of capsizing or falling overboard. They may operate a fixed-seat rowboat or pedal boat accompanied by a buddy who is a swimmer. They may ride in a canoe or other paddle craft with an adult swimmer skilled in that craft as a buddy. They may ride as part of a group on a motorboat or sailboat operated by a skilled adult.

4. Life Jackets

Properly fitted U.S. Coast Guard–approved life jackets must be worn by all persons engaged in boating activity (rowing, canoeing, sailing, boardsailing, motorboating, waterskiing, rafting, tubing, and kayaking). Type III life jackets are recommended for general recreational use.

For vessels over 20 feet in length, life jackets need not be worn when participants are below deck or on deck when the qualified supervisor aboard the vessel determines that it is prudent to abide by less-restrictive state and federal regulations concerning the use and storage of life jackets, for example, when a cruising vessel with safety rails is at anchor. All participants not classified as swimmers must wear a life jacket when on deck underway.

Life jackets need not be worn when an activity falls under Safe Swim Defense guidelines—for example, when an inflated raft is used in a pool or when snorkeling from an anchored craft.

5. Buddy System

All participants in an activity afloat are paired as buddies who are always aware of each other's situation and prepared to sound an alarm and lend assistance immediately when needed. When several craft are used on a float trip, each boat on the water should have a "buddy boat." All buddy pairs must be accounted for at regular intervals during the activity and checked off the water by the qualified supervisor at the conclusion of the activity. Buddies either ride in the same boat or stay near each other in single-person craft.

6. Skill Proficiency

Everyone in an activity afloat must have sufficient knowledge and skill to participate safely. Passengers should know how their movement affects boat stability and have a basic understanding of self-rescue. Boat operators must meet government requirements, be able to maintain control of their craft, know how changes in the environment influence that control, and undertake activities only that are within their personal and group capabilities.

Content of training exercises should be appropriate for the age, size, and experience of the participants, and should cover basic skills on calm water of limited extent before proceeding to advanced skills involving current, waves, high winds, or extended distance. At a minimum, instructors for canoes and kayaks should be able to demonstrate the handling and rescue skills required for BSA Aquatics Supervision: Paddle Craft Safety. All instructors must have a least one assistant who can recognize and respond appropriately if the instructor's safety is compromised.

Anyone engaged in recreational boating using human powered craft on flatwater ponds or controlled lake areas free of conflicting activities should be instructed in basic safety procedures prior to launch, and allowed to proceed after they have demonstrated the ability to control the boat adequately to return to shore at will.

For recreational sailing, at least one person aboard should be able to demonstrate basic sailing proficiency (tacking, reaching, and running) sufficient to return the boat to the launch point. Extended cruising on a large sailboat requires either a professional captain or an adult with sufficient experience to qualify as a bareboat skipper.

Motorboats may be operated by youth, subject to state requirements, only when accompanied in the boat by an experienced leader or camp staff member who meets state requirements for motorboat operation. Extended cruising on a large power boat requires either a professional captain or an adult with similar qualifications.

Before a unit using human-powered craft controlled by youth embarks on a float trip or excursion that covers an extended distance or lasts longer than four hours, each participant should receive either a minimum of three hours training and supervised practice, or demonstrate proficiency in maneuvering the craft effectively over a 100-yard course and recovering from a capsized.

Unit trips on whitewater above Class II must be done with either a professional guide in each craft or after all participants have received American Canoe Association or equivalent training for the class of water and type of craft involved.

7. Planning

Proper planning is necessary to ensure a safe, enjoyable exercise afloat. All plans should include a scheduled itinerary, notification of appropriate parties, communication arrangements, contingencies in case of foul weather or equipment failure, and emergency response options.

Preparation. Any boating activity requires access to the proper equipment and transportation of gear and participants to the site. Determine what state and local regulations are applicable. Get permission to use or cross private property. Determine whether personal resources will be used or whether outfitters will supply

equipment, food, and shuttle services. Lists of group and personal equipment and supplies must be compiled and checked. Even short trips require selecting a route, checking water levels, and determining alternative pull-out locations. Changes in water level, especially on moving water, may pose significant, variable safety concerns. Obtain current charts and information about the waterway and consult those who have traveled the route recently.

Float Plan. Complete the preparation by writing a detailed itinerary, or float plan, noting put-in and pullout locations and waypoints, along with the approximate time the group should arrive at each. Travel time should be estimated generously. **Notification.** File the float plan with parents, the local council office if traveling on running water, and local authorities if appropriate. Assign a member of the unit committee to alert authorities if prearranged check-ins are overdue. Make sure everyone is promptly notified when the trip is concluded.

Weather. Check the weather forecast just before setting out, and keep an alert weather eye. Anticipate changes and bring all craft ashore when rough weather threatens. Wait at least 30 minutes before resuming activities after the last incidence of thunder or lightning.

Contingencies. Planning must identify possible emergencies and other circumstances that could force a change of plans. Develop alternative plans for each situation. Identify local emergency resources such as EMS systems, sheriff's departments, or ranger stations. Check your primary communication system, and identify backups, such as the nearest residence to a campsite. Cell phones and radios may lose coverage, run out of power, or suffer water damage.

8. Equipment

All craft must be suitable for the activity, be seaworthy, and float if capsized. All craft and equipment must meet regulatory standards, be properly sized, and be in good repair. Spares, repair materials, and emergency gear must be carried as appropriate. Life jackets and paddles must be sized to the participants. Properly designed and fitted helmets must be worn when running rapids rated above Class II. Emergency equipment such as throw bags, signal devices, flashlights, heat sources, first-aid kits, radios, and maps must be ready for use. Spare equipment, repair materials, extra food and water, and dry clothes should be appropriate for the activity. All gear should be stowed to prevent loss and water damage. For float trips with multiple craft, the number of craft should be sufficient to carry the party if a boat is disabled, and critical supplies should be divided among the craft.

9. Discipline

Rules are effective only when followed. All participants should know, understand, and respect the rules and procedures for safe boating activities provided by Safety Afloat guidelines. Applicable rules should be discussed prior to the outing and reviewed for all participants near the boarding area just before the activity afloat begins. People are more likely to follow directions when they know the reasons for rules and procedures. Consistent, impartially applied rules supported by skill and good judgment provide stepping-stones to a safe, enjoyable outing.

For additional information on Safety Afloat, go to www.scouting.org/HealthandSafety/Aquatics/safety-afloat.aspx.

BSA groups shall use Safe Swim Defense for all swimming activities. Adult leaders supervising a swimming activity must have completed Safe Swim Defense training within the previous two years. Safe Swim Defense standards apply at backyard, hotel, apartment, and public pools; at established waterfront swim areas such as beaches at state parks and U.S. Army Corps of Engineers lakes; and at all temporary swimming areas such as a lake, river, or ocean. Safe Swim Defense does not apply to boating or water activities such as waterskiing or swamped boat drills that are covered by Safety Afloat guidelines. Safe Swim Defense applies to other nonswimming activities whenever participants enter water over knee deep or when submersion is likely, for example, when fording a stream, seining for bait, or constructing a bridge as a pioneering project. Snorkeling in open water requires each participant to have demonstrated knowledge and skills equivalent to those for Snorkeling BSA in addition to following Safe Swim Defense. Scuba activities must be conducted in accordance with the BSA Scuba policy found in the *Guide to Safe Scouting*. Because of concerns with hyperventilation, competitive underwater swimming events are not permitted in Scouting.

Safe Swim Defense training may be obtained from the BSA Online Learning Center at olc.scouting.org, at council summer camps, and at other council and district training events. Confirmation of training is required on local and national tour permits for trips that involve swimming. Additional information on various swimming venues is provided in the Aquatics Supervision guide available from council service centers.

1. **Qualified Supervision**

All swimming activity 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 those in his or her care, and who is trained in and committed to compliance with the eight points of BSA Safe Swim Defense. It is strongly recommended that all units have at least one adult or older youth member currently trained in BSA Aquatics Supervision: Swimming and Water Rescue or BSA Lifeguard to assist in planning and conducting all swimming activities.

2. **Personal Health Review**

A complete health history is required of all participants as evidence of fitness for swimming activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. Supervision and protection should be adjusted to anticipate any potential risks associated with individual health conditions. For significant health conditions, the adult supervisor should require an examination by a physician and consult with the parent, guardian, or caregiver for appropriate precautions.

3. **Safe Area**

All swimming areas must be carefully inspected and prepared for safety prior to each activity. Water depth, quality, temperature, movement, and clarity are important considerations. Hazards must be eliminated or isolated by conspicuous markings and discussed with participants.

Controlled Access: There must be safe areas for all participating ability groups to enter and leave the water. Swimming areas of appropriate depth must be defined for each ability group. The entire area must be within easy reach of designated rescue personnel. The area must be clear of boat traffic, surfing, or other nonswimming activities.

Bottom Conditions and Depth: The bottom must be clear of trees and debris. Abrupt changes in depth are not allowed in the nonswimmer area. Isolated underwater hazards should be marked with floats. Rescue personnel must be able to easily reach the bottom. Maximum recommended water depth in clear water is 12 feet. Maximum water depth in turbid water is 8 feet.

Visibility: Underwater swimming and diving are prohibited in turbid water. Turbid water exists when a swimmer treading water cannot see his feet. Swimming at night is allowed only in areas with water clarity and lighting sufficient for good visibility both above and below the surface.

Diving and Elevated Entry: Diving is permitted only into clear, unobstructed water from heights no greater than 40 inches. Water depth must be at least 7 feet. Bottom depth contours below diving boards and elevated surfaces require greater water depths and must conform to state regulations. Persons should not jump into water from heights greater than they are tall, and should jump only into water chest deep or greater with minimal risk from contact with the bottom. No elevated entry is permitted where the person must clear any obstacle, including land.

Water Temperature: Comfortable water temperature for swimming is near 80 degrees. Activity in water at 70 degrees or less should be of limited duration and closely monitored for negative effects of chilling.

Water Quality: Bodies of stagnant, foul water, areas with significant algae or foam, or areas polluted by livestock or waterfowl should be avoided. Comply with any signs posted by local health authorities. Swimming is not allowed in swimming pools with green, murky, or cloudy water.

Moving Water: Participants should be able to easily regain and maintain their footing in currents or waves. Areas with large waves, swiftly flowing currents, or moderate currents that flow toward the open sea or into areas of danger should be avoided.

Weather: Participants should be moved from the water to a position of safety whenever lightning or thunder threatens. Wait at least 30 minutes after the last lightning flash or thunder before leaving shelter. Take precautions to prevent sunburn, dehydration, and hypothermia.

Life Jacket Use: Swimming in clear water over 12 feet deep, in turbid water over 8 feet deep, or in flowing water may be allowed if all participants wear properly fitted, Coast Guard–approved life jackets and the supervisor determines that swimming with life jackets is safe under the circumstances.

4. **Response Personnel (Lifeguards)**

Every swimming activity must be closely and continuously monitored by a trained rescue team on the alert for and ready to respond during emergencies. Professionally trained lifeguards satisfy this need when provided by a regulated facility or tour operator. When lifeguards are not provided by others, the adult supervisor must assign at least two rescue personnel, with additional numbers to maintain a ratio of one rescuer to every 10 participants. The supervisor must provide instruction and rescue equipment and assign areas of responsibility as outlined in Aquatics Supervision, No. 34346. The qualified supervisor, the designated response personnel, and the lookout work together as a safety team. An emergency action plan should be formulated and shared with participants as appropriate.

5. **Lookout**

The lookout continuously monitors the conduct of the swim, identifies any departures from Safe Swim Defense guidelines, alerts rescue personnel as needed, and monitors the weather and environment. The lookout should have a clear view of the entire area but be close enough for easy verbal communication. The lookout must have a sound understanding of Safe Swim Defense but is not required to perform rescues. The adult supervisor may serve simultaneously as the lookout but must assign the task to someone else if engaged in activities that preclude focused observation.

6. **Ability Groups**

All youth and adult participants are designated as swimmers, beginners, or nonswimmers based on swimming ability confirmed by standardized BSA swim classification tests. Each group is assigned a specific swimming area with depths consistent with those abilities. The classification tests should be renewed annually, preferably at the beginning of the season.

Swimmers pass this test: Jump feetfirst into water over the head in depth. Level off and 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 completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.

Beginners pass this test: Jump feetfirst into water over the head in depth, level off, and swim 25 feet on the surface. Stop, turn sharply, resume swimming and return to the starting place.

Anyone who has not completed either the beginner or swimmer tests is classified as a nonswimmer.

The nonswimmer area should be no more than waist to chest deep and should be enclosed by physical boundaries such as the shore, a pier, or lines. The enclosed beginner area should contain water of standing depth and may extend to depths just over the head. The swimmer area may be up to 12 feet in depth in clear water and should be defined by floats or other markers.

7. **Buddy System**

Every participant is paired with another. Buddies stay together, monitor each other, and alert the safety team if either needs assistance or is missing. Buddies check into and out of the area together.

Buddies are normally in the same ability group and remain in their assigned area. If they are not of the same ability group, then they swim in the area assigned to the buddy with the lesser ability.

A buddy check reminds participants of their obligation to monitor their buddies and indicates how closely the buddies are keeping track of each other. Roughly every 10 minutes, or as needed to keep the buddies together, the lookout, or other person designated by the supervisor, gives an audible signal, such as a single whistle blast, and a call for "Buddies." Buddies are expected to raise each other's hand before completion of a slow, audible count to 10. Buddies that take longer to find each other should be reminded of their responsibility for the other's safety.

Once everyone has a buddy, a count is made by area and compared with the total number known to be in the water. After the count is confirmed, a signal is given to resume swimming.

8. **Discipline**

Rules are effective only when followed. All participants should know, understand, and respect the rules and procedures for safe swimming provided by Safe Swim Defense guidelines. Applicable rules should be discussed prior to the outing and reviewed for all participants at the water's edge just before the swimming activity begins. People are more likely to follow directions when they know the reasons for rules and procedures. Consistent, impartially applied rules supported by skill and good judgment provide stepping-stones to a safe, enjoyable outing.

For more information regarding Safe Swim Defense, go to www.scouting.org/HealthandSafety/Aquatics/safe-swim.aspx.