MERIT BADGE SERIES

SWIMMING

BOY SCOUTS OF AMERICA®

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"Enhancing our youths' competitive edge through merit badges"

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Note to the Counselor

Merit badge counselors are responsible for following the requirements, procedures, and techniques presented in this pamphlet and ensuring that each Scout earning the merit badge is able to demonstrate knowledge and skills at a level consistent with the requirements. In addition, counselors must ensure that all applicable BSA safety policies, including Safe Swim Defense and Safety Afloat, are followed during training, practice, and review.

Counselors for the Swimming merit badge must be registered members of the Boy Scouts of America, have current training in swimming (either Safe Swim Defense or Safety Afloat, or both), and be approved by the local council advancement committee. Councils with an aquatics committee should utilize that committee to coordinate with the advancement committee for approval of qualified counselors.

All counselors should have formal training in the knowledge and skills indicated by the requirements, experience in teaching such skills to youth, and experience in identifying and managing risks associated with the activities involved. This should include, at minimum, current or previous certification as Aquatics Instructor, BSA or instructor certification from the American Red Cross or YMCA. The council advancement committee may approve counselors with similar experience and training in knowledge, skill, safety, and instruction.

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Demonstrations or activities in the water must be conducted according to BSA Safe Swim Defense standards, which appear in the "Safety and First Aid" section.

Emphasis on Stroke Mechanics

With the revisions to the Swimming merit badge requirements, the goal is to emphasize teaching Scouts correct stroke mechanics. It is critical for them to learn these strokes correctly, in good form and with proper breathing, so they can swim with greater ease and efficiency. Furthermore, the ability to correctly perform these strokes will make Scouts safer in and around the water as well as when they tackle advanced water activities such as the Lifesaving merit badge and BSA Lifeguard.

Requirements

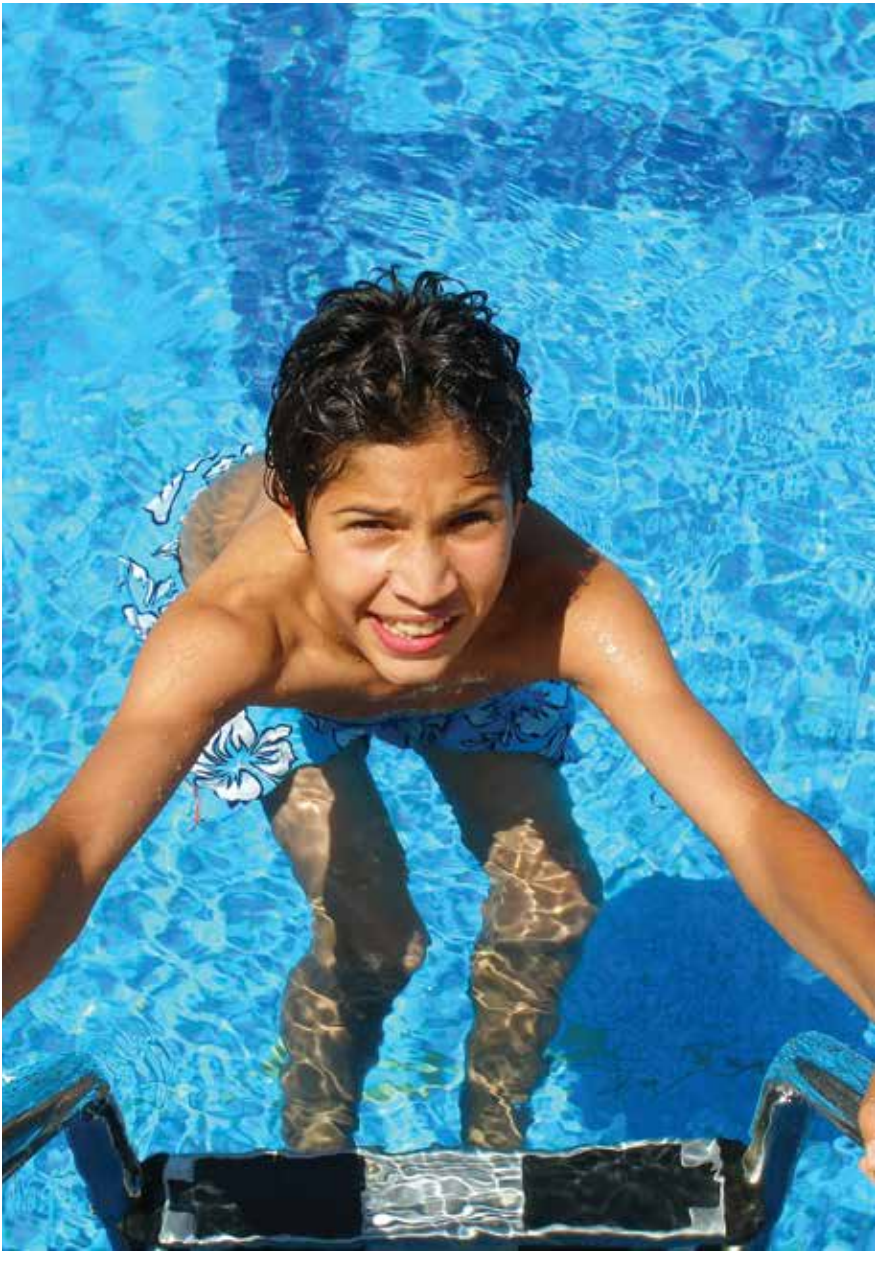
Always check www.scouting.org for the latest requirements.

1. Do the following:
   a. Explain to your counselor how Scouting's Safe Swim Defense plan anticipates, helps prevent and mitigate, and provides responses to likely hazards you may encounter during swimming activities.
   b. Discuss the prevention and treatment of health concerns that could occur while swimming, including hypothermia, dehydration, sunburn, heat exhaustion, heatstroke, muscle cramps, hyperventilation, spinal injury, stings and bites, and cuts and scrapes.
2. Before doing the following requirements, successfully complete the BSA swimmer 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.
3. Correctly perform the following strokes:
   a. Demonstrate the front crawl or the trudgen using good form.
   b. Demonstrate the back crawl using good form.
   c. Demonstrate the sidestroke using good form.
   d. Demonstrate the breaststroke using good form.
   e. Demonstrate the elementary backstroke using good form.
4. Swim continuously for 150 yards in a strong manner using each of the following strokes in any order; front crawl or trudgen (25 yards); back crawl (25 yards); sidestroke (25 yards); breaststroke (25 yards); and elementary backstroke (50 yards).

5. Do the following:
   a. Demonstrate water rescue methods by reaching with your arm or leg, by reaching with a suitable object, and by throwing lines and objects. Explain why swimming rescues should not be attempted when a reaching or throwing rescue is possible, and explain why and how a rescue swimmer should avoid contact with the victim.
   b. With a helper and a practice victim, show a line rescue both as tender and as rescuer. The practice victim should be approximately 30 feet from shore in deep water.

6. Do the following:
   a. Float faceup in a resting position for at least three minutes with minimal movement.
   b. Demonstrate survival floating for at least five minutes.
   c. While wearing a properly fitted U.S. Coast Guard–approved life jacket, demonstrate the HELP and huddle positions. Explain their purposes.
   d. Explain why swimming or survival floating will hasten the onset of hypothermia in cold water.
7. In water over your head, but not to exceed 10 feet, do each of the following:
   a. Use the feetfirst method of surface diving and bring an object up from the bottom.
   b. Do a headfirst surface dive (pike or tuck), and bring the object up again.
   c. Do a headfirst surface dive to a depth of at least 5 feet and swim underwater for three strokes. Come to the surface, take a breath, and repeat the sequence twice.
8. Following the guidelines set in the BSA Safe Swim Defense, in water at least 7 feet deep*, show a standing headfirst dive from a dock or pool deck. Show a long shallow dive, also from the dock or pool deck.
9. Explain the health benefits of regular aerobic exercise, and discuss why swimming is favored as both fitness and therapeutic exercise.

*If your state, city, or local community requires a water depth greater than 7 feet, it is important to abide by that mandate.



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Safety and First Aid

Developed more than 60 years ago, the procedures included in the Boy Scouts of America's water safety plan have earned Scouting what is believed to be the most commendable water safety record of any youth organization in the United States.

BSA Safe Swim Defense

All swimming activities in Scouting must be conducted according to BSA Safe Swim Defense standards. The eight points of Safe Swim Defense are as follows.

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 the planning and conducting of 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.

If your state, city, or local community requires a water depth greater than 7 feet, it is important to abide by that mandate.

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 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.

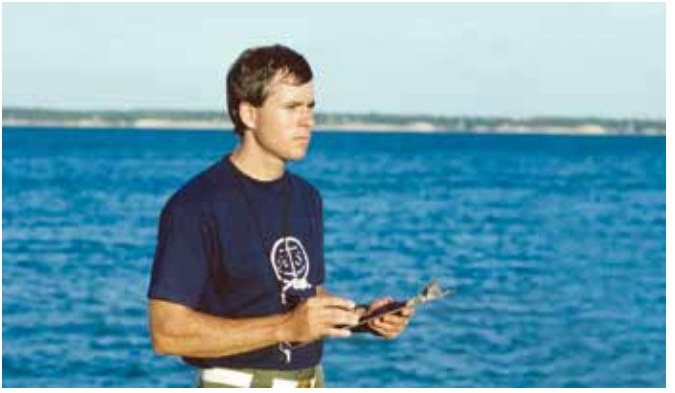
Weather. Participants should be moved from the water to a position of safety whenever lightning or thunder threatens. Wait at least 30 minutes after the last lightning flash or thunder before leaving shelter. Take precautions to prevent sunburn, dehydration, and hypothermia.

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 to participants of one rescuer to every 10 participants. The supervisor must provide instruction and rescue equipment and assign areas of responsibility as outlined in the *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 by the safety team 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 response 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 even if the Scout has earned the Swimming merit badge.

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 participant. 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 who 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.

Pool and Surf Swimming

Safe Swim Defense applies to swimming at a beach, private or public pool, wilderness pond, stream, lake, or anywhere Scouts swim. Here are some additional points for the pool and the surf.

Pool. If the swimming activity is in a public facility where others are using the pool at the same time and the pool operator provides guard personnel, there may be no need for additional Scout lifeguards and lookouts. However, there must always be an adult supervisor who understands his or her responsibility and ensures that the elements of Safe Swim Defense are followed. The buddy system is also critically important, even in a public pool. Even in a crowd, you are alone without protection if no one is paying attention to your circumstances.

The rule that people swim only in water depths suited to their ability also applies at pools. Most public pools divide shallow and deep water. This may be enough for defining appropriate swimming areas. If not, the supervisor should clearly point out to participants the appropriate areas of the public facility.

If you have a cramp while swimming in deep water and cannot swim to safety, float on your back or survival float and wait for help.

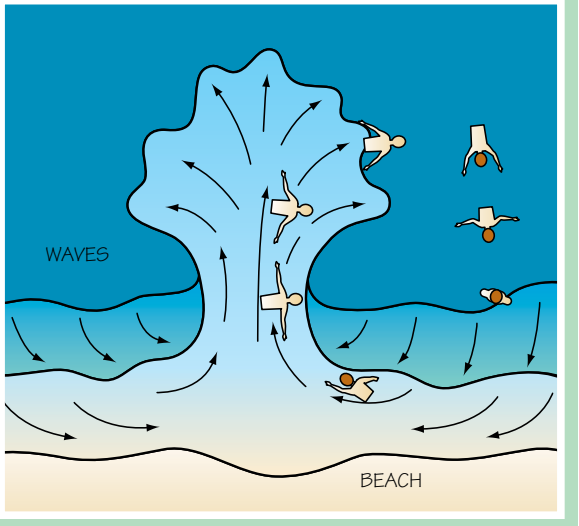
Rip Currents

The United States Lifesaving Association estimates that most rescues—about 80 percent—at surf beaches involve swimmers caught in rip currents. More than 100 swimmers die each year from this swimming hazard. Rip currents are long, narrow sections of water that form after waves break and the water goes back out. Rip currents form a funnel of current that moves much faster than the current on either side. The current can be so strong that it may be difficult or impossible to swim against it. It can carry an unsuspecting swimmer long distances from shore and even out to sea.

Rip currents occur in oceans and any place where there are waves, including bodies of water such as the Great Lakes. To avoid getting caught in a rip current, do not swim near piers or jetties (walls built out into the water to protect a harbor or beach). Rip currents are often hard to see, but look for the following clues:

- An area having a noticeable difference in water color
- A channel of churning, choppy water
- A line of foam, seaweed, or debris moving steadily away from shore
- A break in the incoming wave pattern

If you are caught in a rip current, don't fight it by swimming toward the beach. Instead, turn and escape by swimming parallel to the shore. If that doesn't work, float or tread water. Call or wave for help.



Surf. The surf environment—with its wave action, currents, tides, backwash, and sea life such as stinging jellyfish—requires precautions for safe swimming that aren't necessary in other environments. A swimmer's physical condition and skill are very important and should enable the swimmer to recover footing in waves, swim for long periods without getting worn out, and remain calm and in control when faced with unexpected conditions.

Unless your unit is experienced in ocean swimming, it is probably best to swim at a beach with professional lifeguards.

Designated swimming areas are marked by flags or pennants that are easy to see. Beginners and nonswimmers should be positioned inshore from standing lifeguards who are equipped with rescue equipment. Better swimmers are permitted seaward of the lifeguards but must remain shoreward of anchored marker buoys. The lifeguard-to-swimmer ratio should always be 1-to-10 with a rescue team supplied with a rescue tube or other flotation aid stationed at the beach area.

Prevention goes hand in hand with mitigation, which means "to lessen in force or intensity" and "to make less severe." By taking precautions to manage risk and the possibility of injury, you can be prepared to anticipate, help prevent, mitigate, and respond to just about any incident that might happen while swimming.

First Aid

Following Safe Swim Defense will eliminate any serious risks in swimming, but remember to take proper precautions.

Hypothermia occurs when the body's core temperature falls below the normal range and the body cannot produce enough heat. Early signs include bluish lips and shivering. Further cooling will upset the victim's ability to think clearly and to do simple tasks. The person may appear groggy and lack coordination. As cooling continues, the pulse rate slows and blood is directed to the critical organs and away from the extremities as the body attempts to prevent further heat loss. The heart and lungs keep working at the expense of the hands, feet, and brain. Further cooling will lead to unconsciousness and even death.

The first treatment for hypothermia is to prevent further heat loss. Once out of the water, the victim should not be allowed to walk. Move the victim to warmth and shelter such as a building, tent, or vehicle. As soon as possible, remove wet clothing and put on dry clothes or wrap the person in a blanket or dry towels. If the victim is unconscious, open the airway and check for breathing. You may apply warm (but not hot) towels or items such as hot water bottles wrapped in a towel to *only* the trunk, crotch, neck, and head. Do not rub the victim's legs or apply warming devices to the arms or legs. These actions may cause more blood to flow to the surface of the skin and away from vital organs. Finally, since even mild cases of hypothermia place the body in a highly stressed condition, closely watch all hypothermia victims for several hours even if they appear to have recovered.

Dehydration happens when we lose more water than we take in. Symptoms of mild dehydration include increased thirst, dry lips, and dark yellow urine. Symptoms of moderate to severe dehydration include severe thirst, dry mouth with little saliva, dry skin, weakness, dizziness, confusion, nausea, cramping, loss of appetite, decreased sweating (even with exertion), decreased urine production, and dark brown urine.

Avoid dehydration by drinking plenty of fluids and eating enough throughout the day to keep your body well-balanced. If you become weary or develop a headache or body aches, or if you become confused, rest in the shade and sip water until the symptoms subside.

For mild dehydration, drink a quart or two of water or sports drink over two to four hours. Rest for 24 hours and continue drinking fluids. See a medical doctor for moderate to severe dehydration, which requires emergency care. Prevent dehydration by drinking plenty of fluids whenever you are swimming, in hot or cool weather. Drink enough so that your urine stays clear.

Sunburn is a familiar condition that can occur during swimming activities. Reflected sunlight from the water can be as damaging as direct exposure. To prevent sunburn, cover up and use a waterproof sunscreen with a sun protection factor, or SPF, of at least 30. Reapply sunscreen often whenever you are swimming, and limit your time in the sun. If your skin begins to redden or feel painful, get out of the sun. To treat sunburn, apply clean, web compresses (cloths, towels, or gauze pads) dipped in cool water. Protect the burned area from further sun exposure.

Most **sunburns** are first-degree burns, but repeated sunburn over a long period of time can cause skin damage and increase the risk of skin cancer. It's best to prevent sunburn by using plenty of sunscreen—even on cloudy days—with a sun protection factor (SPF) rating of at least 30. Wear a hat and cover up whenever you are not swimming. If you have to treat a painful sunburn, use a cool, wet cloth and change it frequently. Find shade.

Waiting until a sunburn appears means you have waited too long to protect your skin.

Heat reactions, including heat exhaustion and heatstroke, result when the body can't keep itself cool enough. Symptoms of *heat exhaustion* may include dizziness, faintness, nausea, and a severe lack of energy. A person also may develop a headache, muscle cramps, and rapid pulse; look pale; and be sweating heavily. To treat heat exhaustion, have the victim lie down in a cool, shady spot with the feet raised. Loosen clothing and cool the person with a damp cloth or a fan. Have him or her sip water. Recovery should be rapid. If the condition worsens, get medical help.

Heatstroke is the extreme, life-threatening stage of a heat reaction in which dehydration (water loss) has caused a very high body temperature. The victim's cooling system has started to fail, and the person's core temperature is at a dangerously high level. In addition to any symptoms of heat exhaustion, heatstroke symptoms can include hot, sweaty, red skin, confusion, and disorientation; the victim may be unconscious. The victim must be cooled immediately. Loosen tight clothing, fan the person, and apply wet towels. If you have ice packs, wrap them in a thin barrier (such as a T-shirt) and place them under the armpits and against the neck and groin area. If the person is able to drink, give small amounts of cool water. Treat for shock and seek emergency medical help.

Prevent heat reactions by drinking plenty of fluids and limiting time out in the open on hot days.

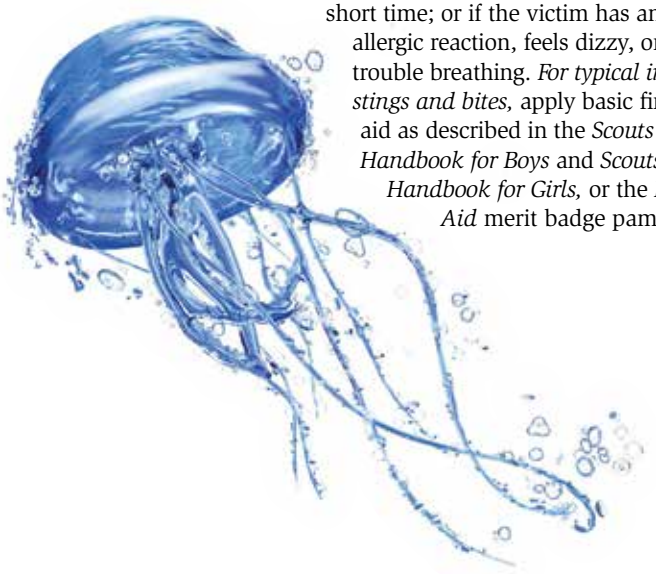
Muscle cramps, sometimes called muscle spasms, occur when muscles are not getting enough oxygen or nutrients or when the blood flow cannot prevent the build-up of wastes in muscles. Vigorous exercise and sweating can cause muscle cramps in the limbs. Cold water or cold weather increases the likelihood of cramping. Sudden, vigorous exercise without proper warm-up also can increase the risk of muscle cramps. If a muscle begins to cramp while you are swimming, get out of the water and massage the cramp. If conditions are hot, cool down and drink fluids. If conditions are cold, find warmth and cover. Rub the cramping muscles to improve circulation.

Hyperventilation is the result of overbreathing, either deliberately or as a result of panic. Hyperventilating decreases the level of carbon dioxide in the blood and suppresses the breathing reflex. The likely result is dizziness and fainting. Hyperventilation from panic is not likely to occur in swimming if all participants stay in water suited to their individual skill levels and the activity is properly supervised and disciplined. Swimmers who become panicky should be removed from the water and calmed. Before resuming any water activity, determine and resolve the cause of the panic. Foolish swimmers may deliberately hyperventilate to suppress the breathing reflex for underwater swimming. This is dangerous and puts swimmers at high risk. Such conduct is prohibited and should be sharply disciplined.

Spinal injuries can occur from diving into shallow or obstructed water. Rescuers must be very careful when a spinal injury is suspected. Spinal injuries can be fatal or can cause paralysis. If the victim is not handled properly, additional serious injury could result. Moving a victim is an extremely delicate task best left to trained emergency personnel, but if no one else is present you may need to act. In a swimming accident, you may have to move the victim to prevent drowning or to perform rescue breathing.

When tending to a suspected spinal injury victim, move the victim's head, neck, and back as little as possible. The technique used to limit this movement is called *in-line stabilization.* For information on this technique, see the chapter concerning spinal injury management in the *Lifesaving* merit badge pamphlet.

Stings and bites are not a common hazard when swimming in pools or lakes, but in saltwater swimmers may suffer severe stings from certain types of jellyfish or other saltwater creatures. Knowing the body of water you are swimming in and avoiding possible contact with dangerous sea animals is the best strategy. *For jellyfish stings,* soak the area with vinegar or alcohol, or cover with a paste of baking soda mixed with water. Get medical help if the pain is severe; if the pain does not let up in a short time; or if the victim has an allergic reaction, feels dizzy, or has trouble breathing. *For typical insect stings and bites,* apply basic first aid as described in the *Scouts BSA Handbook for Boys* and *Scouts BSA Handbook for Girls,* or the *First Aid* merit badge pamphlet.



Speaking of stings and bites, if you will be swimming in the ocean, beware of sharks and stingrays. (Although bull sharks have been known to inhabit the waterways of the Mississippi!) The possibility of a shark bite or contact with a stingray is pretty remote, but play it safe by finding out what you can about the area where you will be swimming before you decide to dive in.

Cuts and scrapes may occur on the feet when swimming in natural waters if the bottom has not been carefully checked for hazards. In pool swimming, such injuries are more likely when climbing in and out of the water without being careful along rough edges or corners. As in other situations, the wound should be cleaned, disinfected, and covered. The patrol first-aid kit should contain appropriate supplies for minor wound treatment. For severe bleeding injuries, control bleeding with direct pressure or at pressure points until emergency medical help arrives.

Survival Skills

Cold Water

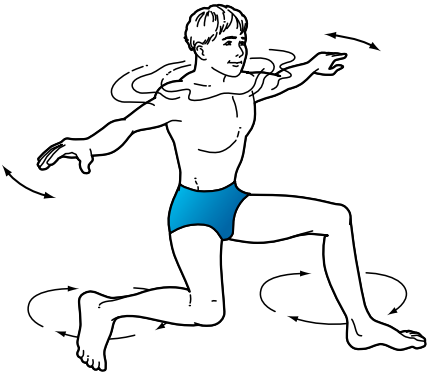
When a person is in cold water, the skin and nearby tissues cool quickly. The body immediately begins producing heat to rewarm the skin and to prevent the cooling of vital organs. Hypothermia occurs when the body loses heat faster than it can produce it, which causes the internal body temperature to decrease.

Moving water and wind substantially increase the loss of body heat. Swimming and treading water also cool the body faster than remaining still.

Water or air temperature lower than 70 degrees poses hypothermia risks. If goose bumps appear on wet skin shortly after leaving the water, then the air temperature should be considered cold and swimmers should take proper precautions. The first protection for cold-water activity is to reduce the length of time in or on the water. At 70 degrees, maximum safe in-the-water time is approximately 20 minutes. Open-water swimming in temperatures of 65 degrees or lower may pose substantial risks and should be avoided. In all swimming activities, precautions should include procedures and equipment for immediate warming of anyone showing symptoms of chill.

Activities Afloat

For all activity afloat on cold water or in cold weather, wear appropriate clothing to keep you warm. You should wear a life jacket at all times, normally on top of the outermost garment. Have a dry change of clothes available in case of a spill. As in swimming, preparation and plans for any activity afloat should include procedures and equipment for warming anyone showing symptoms of chill. Overboard activity is not recommended in water temperatures of 65 degrees or lower, except for closely supervised capsize skills training in preparation for activity afloat.



For treading water, you can use the rotary kick, but do so sparingly. Your body will tire quickly and lose heat rapidly when treading water.

A properly fitted U.S. Coast Guard–approved life jacket should be worn for all activities afloat in small craft. The life jacket will help keep you afloat. In addition, it can provide insulation and significantly reduce heat loss in cold water that could lead to hypothermia.

If you are alone in cold water and more than a short distance from safety, your best strategy is to float motionless. This will help you conserve heat. Keep your life jacket and all clothing on for insulation. Heat loss is most rapid from the head and crotch.

Because water will move heat away from the body faster than air, keeping your face and head in the water will speed up heat loss. Vigorous swimming will chill you most rapidly. Treading water is tiring and will produce heat loss almost as rapidly as swimming. Survival floating, or drown-proofing (described later in this chapter), might be somewhat better than swimming or treading water if your movements are slow and limited, but submerging the head and face will increase heat loss.

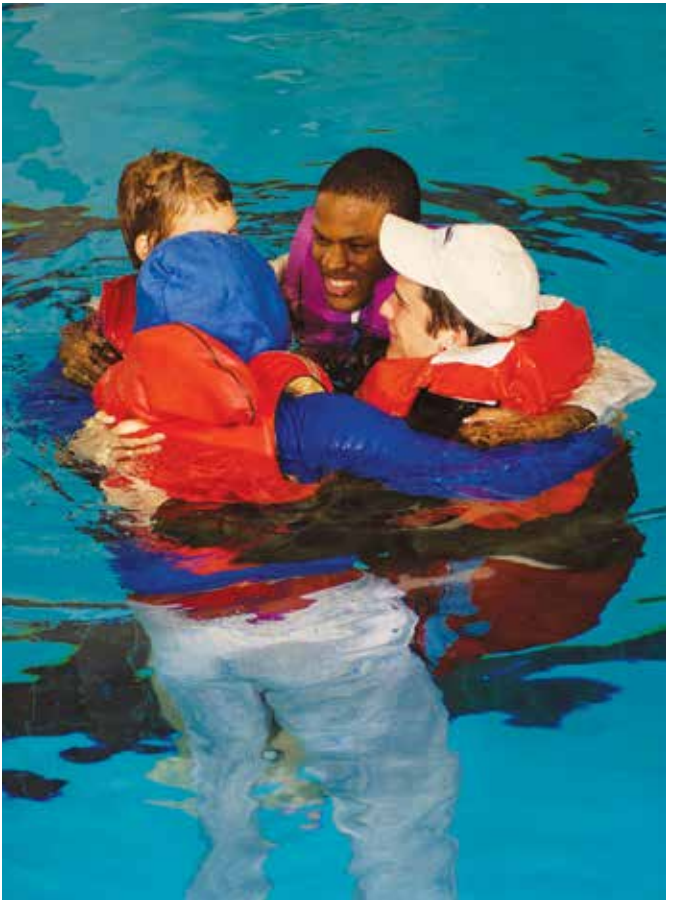
HELP (heat escape lessening posture)

Huddle together with sides touching.

For these reasons, your best cold-water survival strategy is to float motionless with your life jacket and clothes on, your head out of the water, and your legs drawn up close to your chest. This is called the *heat escape lessening posture* (HELP). If you are stranded in cold water with one or more persons, you should huddle together to reduce the cold-water contact and conserve heat. To do this, press together tightly and float motionless.

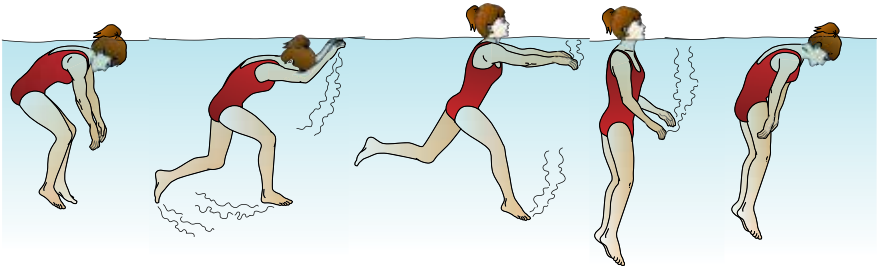
Surviving in Cold Water

- Wear a life jacket.
- Keep your head out of the water.
- Get out of the water onto your boat, a log, a raft, or anything that floats.
- Remain as still as possible while in the water.
- While afloat in the water, do not attempt to swim unless it is to reach a nearby craft, fellow survivor, or floating object that you can lean on or climb onto.
- If there is more than one person in the water, huddling is recommended while waiting to be rescued.
- Maintain a positive mental attitude. Never give up hope.



Survival Floating

What if you find yourself in deep water without flotation support and too far from shore to swim? Perhaps you were swept out to sea by an unusually strong current or thrown overboard from a boat in strong waves. You must keep yourself afloat until help arrives. Floating on your back is a good plan if there are no waves. Another possibility is survival floating, or drown-proofing, which will work even if you are being tossed around by wind and waves.



Survival floating, or drown-proofing

To survival float, begin by taking a breath, putting your face in the water, and floating facedown in a relaxed position (the jellyfish float). For most people, the back of the neck will break the surface of the water. After holding your breath for a comfortable length of time, begin to exhale slowly while spreading your legs and bringing your arms up near the surface. As you exhale, bring your legs together and push gently down with your arms. This movement should give you just enough lift to raise your head and mouth above the surface for a quick breath. After getting your breath, lower your head and immediately return to your relaxed, facedown position.

Several different arm and leg movements (such as an occasional slow scissors kick) may work well when survival floating. Experiment and practice to find what works best for you. Remember: Less movement is better because you are trying to conserve your energy. Slow, relaxed movement is better than quick or precise movements that take more energy.

As you practice survival floating, you may find that you need to keep your head above water longer than one quick inhalation and that you end up briefly treading water. This will quickly tire you. To correct the problem, be sure to exhale completely while your head is down in the water. Practice survival floating until it becomes easy for you to make slow movements and to exhale in the water and lift your head just enough for one quick breath. Remember to relax—it may be a long wait.


LANE PLACE TIME
ING SWIMMERS

Swimming Skills

One of the most important elements of safety in the water is the ability to swim. Strong swimmers can swim a reasonable distance with a confident, steady stroke. But strong swimmers are not safe swimmers until they can make a safe water entry, swim a restful stroke, and maintain themselves in the water when hurt or exhausted.

All First Class Scouts have demonstrated that they are strong, safe swimmers who have mastered certain in-water skills. The BSA swimmer test—required for First Class advancement—includes these in-water skills and represents the minimum level of ability for safe deepwater swimming. Consider the components of the test:

1. "Jump feetfirst into water over your head in depth, . . ."

You must be able to make an abrupt entry into deep water and begin swimming without any aids. Walking in from shallow water, easing in from the edge or down a ladder, pushing off from a pool's side or bottom, and gaining forward momentum by diving do not satisfy this requirement.

2. ". . . swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; . . ."

You must be able to cover distance with a strong, confident stroke. The 75 yards must not be the outer limit of your ability. You should be able to complete the distance and still have enough stamina to avoid undue risks. Dog paddling and strokes repeatedly interrupted and restarted are insufficient, and underwater swimming is not allowed. The strokes listed above may include variations. Any strong sidestroke or breaststroke, or any strong overarm stroke—including the back crawl—is acceptable.

3. ". . . then swim 25 yards using an easy, resting backstroke. . . ."

You must perform a restful, free-breathing backstroke that can be used to avoid exhaustion during swimming activity. This part of the test will need to follow a more strenuous swimming activity to show that you can, in fact, use the backstroke to rest and recover. You must accomplish the change of stroke in deep water without any push-off or other aid. Any variation of the elementary backstroke is acceptable. The back crawl may be used if it clearly allows you to rest and catch your breath.

4. ". . . The 100 yards must be swum continuously and include at least one sharp turn. . . ."

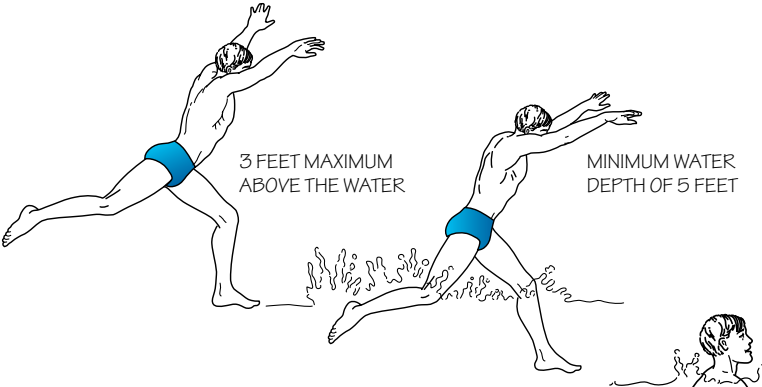
You must cover the total distance without stopping. The sharp turn demonstrates your ability to reverse direction in deep water without assistance or a push-off from the side or bottom.

5. ". . . After completing the swim, rest by floating."

This critically important part of the test evaluates your ability to maintain yourself in the water indefinitely even though exhausted or otherwise unable to keep swimming. Treading water or swimming in place will further tire you and therefore is unacceptable. The length of the float test is not important, except that it must be long enough for the tester to determine that you are resting and likely could continue to do so for a prolonged period. Drown-proofing may be sufficient if it is clearly restful, but it is not preferred. If the test is completed except for the floating requirement, you may be retested on the floating (after instruction) only if the tester feels confident that you can initiate the float when exhausted.

Entering the Water

Get into the habit of entering the water feetfirst whenever you practice swimming skills. This will protect your head and neck from being injured by unseen objects below the surface or when the water is shallower than you think. It is always safer to learn and practice entries in water that is over your head in depth.



Leaping entry (stride jump)

Leaping Entry (Stride Jump)

Stand with both feet near the edge of the pier or pool. The water should be at least 5 feet deep. Lean forward and step far out over the water while pushing off with the other foot. Keep your arms straight and slightly to the side. Keep your head up by looking forward. You should lean into and move out over the water, not jump up. Limit the height of the starting point to 3 feet above the water. As your feet and legs enter the water, snap them together as in a scissors kick. Bring your arms straight down in a slapping motion to break your entry into the water. Timing is key; if you do it right, you won't even get your chin wet. In lifesaving, this entry allows you to keep your subject constantly in sight.

Whenever you are floating, try to keep your lungs well inflated with air. This will help you remain buoyant.

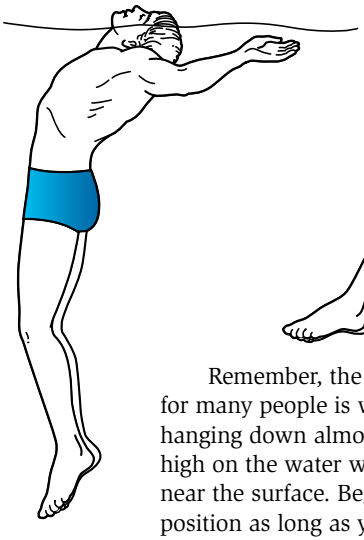
Floating

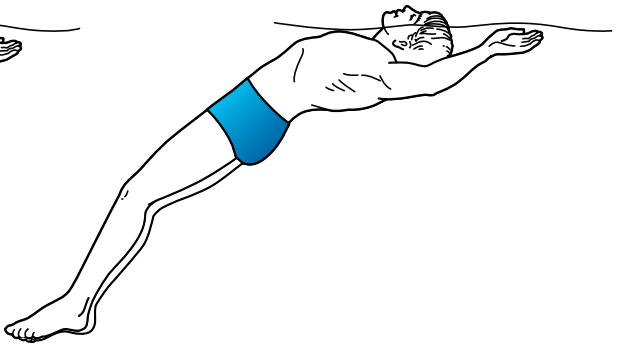
Floating faceup is the most restful way to maintain yourself in deep water. This simple skill requires buoyancy and balance. Buoyancy is the ability to float. Your body has two balancing points known as the *center of buoyancy* and the *center of weight*. When you are floating, your body's center of buoyancy is in your chest. The air in your lungs is mainly what keeps you afloat. Your body's center of weight is lower—about the level of your hips. Your hips and legs are quite heavy, because they are made of muscle and bone. In the water, gravity pulls your hips and legs down, while the air in your lungs makes the upper part of your body more buoyant. When you try to float on your back, your legs and feet sink and your head and chest rise.

To float without moving, you need to adjust your body so that the center of buoyancy is directly above the center of weight. For many people, this means floating with the feet well below the surface and only the head or mouth at the water's surface. When floating, some swimmers are positioned almost vertically in the water.

It is possible to float in a more horizontal position. You cannot change your center of buoyancy, because you cannot change the position of your lungs. You can, however, change your center of weight. To change your center of weight when floating, move your arms away from your sides and above your head. Bend your legs at the knees and let your feet sink or pull your feet up behind and underneath you. This will shift your center of weight closer to your center of buoyancy.

Practice floating in chest-deep water. Start from a standing position. Take a deep breath and hold it. Bend your knees slightly and lean backward, arching your back and moving your neck backward until your ears are in the water and your chin is your highest point. Slowly move your hands and arms away from your sides with your palms up. Keep your arms and hands in the water and move them so they form a Y above your shoulders. Having your arms well past your shoulders will help balance the weight of your legs and feet. Do not try to arm stroke or kick into a higher position, because this will throw off your balance. Relax and let your body settle into its natural floating level and position in the water.





Remember, the natural floating position for many people is with their legs and feet hanging down almost vertically. Others float high on the water with their hips and legs near the surface. Begin by holding your float position as long as you can hold your breath. When you need to breathe, quickly exhale and then breathe in fresh air through your nose or mouth to keep your lungs filled with as much air as possible. As your floating experience and confidence increase, you will be able to breathe in a more relaxed and natural rhythm.

Swimming Strokes

To earn the Swimming merit badge you must demonstrate your swimming strength and stroke proficiency by swimming 150 yards using a combination of five strokes. You must swim continuously in a strong manner for the entire distance and show good form on the front crawl or trudgen for 25 yards, the back crawl for 25 yards, the side-stroke for 25 yards, the breaststroke for 25 yards, and the elementary backstroke for 50 yards.

"Good form" means that you need to perform each stroke with the technique described in this pamphlet. For example, the breaststroke is a restful stroke that includes a long, prone glide between strokes. If your breaststroke is a vigorous, bobbing stroke as used in competition, it is not satisfactory for this requirement. Doing the backstroke using a frog kick rather than a whip kick also is unacceptable for this requirement.

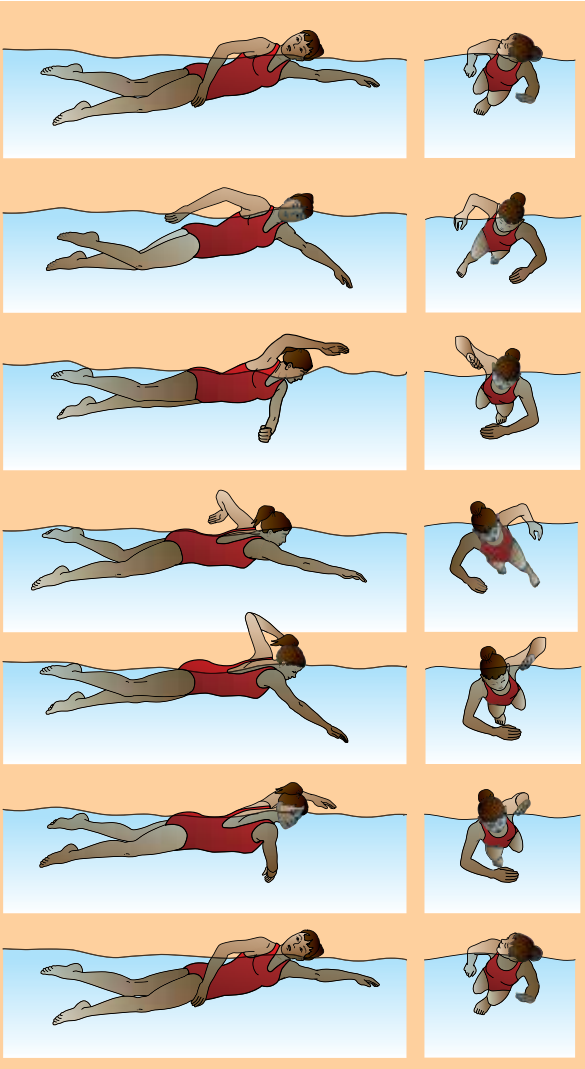
You also are required to swim the specified strokes in a "strong manner." This means no rest stops and no gasping, panting finishes. The stroke sequence begins with the more strenuous strokes and moves through to the more restful strokes, with the last stroke being the most restful. *You should follow the stroke sequence as presented in the requirement.* If you complete the swim "in a strong manner" in the specified sequence, then you should be rested and able to continue well beyond the 150-yard requirement.

On the following pages, you will find the required strokes illustrated and explained as you should swim them to complete requirement 3.

Front Crawl

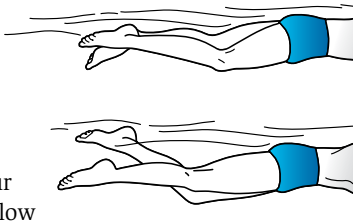
The front crawl has three parts: the flutter kick, the rotating arm stroke, and rhythmic breathing. It is the fastest and one of the most graceful of all swimming strokes.

In competition, the crawl stroke is called "freestyle."



Front crawl, side and front views

Kick. The flutter kick relies on relaxed ankles and the use of the entire leg. The movement begins at the hips and flows to the feet. As one foot moves downward, the other comes up in a beating, or fluttering, rhythm. Kick from the hip and thigh, not from the knee. During the downward part of the kick, your ankle stays relaxed, toes are pointed behind you, and your knee is slightly bent. As your foot reaches the end of the kick, straighten your leg and allow your foot to snap downward. As your foot moves upward, keep that leg and knee straight.



Flutter kick

The kick should be smooth and steady, and your feet should stay just under the water with only your heels breaking the surface. Your big toes should almost touch one another as they pass. The number of kicks, or beats, during one complete arm cycle can vary. For swimming short distances, six kicks per arm cycle works well. You can practice the kick by holding the edge of the pool or by supporting yourself on a kickboard.

Arm Stroke. Most of the forward motion of the front crawl comes from the arm stroke. After diving or pushing off on your stomach with your arms out in front of you, begin the arm stroke with your hands just below the surface. Keep your hands relaxed with your fingers loosely cupped. The water level should be right above your eyebrows; any higher will drive the body down. Look forward and slightly down so you can see where you are going. Avoid looking straight down or bobbing your head up and down.

The arm stroke has three phases: catch, power, and recovery—or CPR. To begin the catch, slightly bend your right wrist and elbow as you move the entire arm downward. Have your palm facing away from your body. Keep your elbow, hand, and wrist fixed in this position. Your hand should be directly in line with your shoulder.

The catch phase of the arm stroke is called the "catch" because it feels like your palm and upper arm have grabbed hold of something.

For the power phase, straighten your wrist and bend the elbow so your forearm is about 45 degrees from the upper arm. Point your fingers down and inward. Push hard against the water, and sweep your hand and forearm down and back under your chest. Your hand will pass just a few inches from the centerline of your body. Your palm should be flat and should push backward against the water. As your hand becomes level with your shoulder, begin to straighten out your arm as it continues to move back and out to just beside your right hip. Your upper body will roll, with your left hip turning down and toward the centerline. This turns your right hip up toward the top of the water just as your right hand reaches the end of the power phase.

As your hand exits the water, the recovery phase begins. Start by lifting your elbow up and forward. Keep your wrist and hand relaxed and trailing behind or hanging below your elbow. As your hand passes the shoulder, it reaches up and forward to enter the water again when it is at shoulder level. When your thumb is even with your eye and your arm is straightened to about three-quarters of its length, allow your fingertips to smoothly enter the water. Rotate your hand so that your thumb enters first as your arm straightens under the water to its full length.

Breathing and Coordination. Swimmers doing the front crawl use a breathing rhythm of one breath for every one, two, three, or more arm cycles. For the purpose of learning and demonstrating the front crawl, you should take a breath for every set of arm cycles on the same side. When your face is in the water, slowly exhale through your nose and mouth.

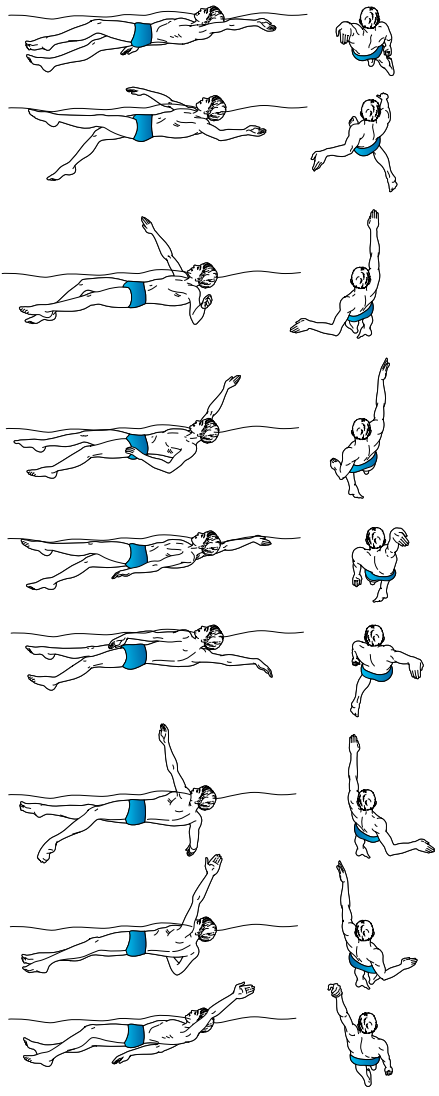
When you need to take a breath, exhale all of the remaining air into the water during the power phase of the arm stroke. As your body rotates during the middle of the power phase, start turning your head so that your mouth is out of the water just as your hand exits by your hip. At the beginning of the recovery phase, inhale quickly and return your head to its former position. Take a breath every arm cycle until you can do it without having to pause. When the stroke is performed correctly, a wave will form around your head as you turn to breathe. Your mouth will be located in the trough of the wave.

Back Crawl

The back crawl, or backstroke, has two parts: a flutter kick and a continuous arm stroke. There is no rhythmic breathing since the face and mouth are above the water.

Kick. The back crawl kick is similar to the front crawl flutter kick but is done deeper in the water. The legs alternate, with the upward kick being the most forceful. Your ankles remain flexible and your toes point away from your head at all times. This allows your feet to function like divers' fins. On the downward part of the kick, keep your leg and knee straight. For the upward part of the kick, bend your knee and kick from the hip as if you were punting a football with the top of your foot. When your knee is just a few inches below the surface, stop the upward motion of the thigh and straighten the knee and leg. Remember to keep your ankles relaxed, so your feet will respond to the water pressure as your legs move.

Arm Stroke. The arm stroke for the back crawl involves alternating the arms, much like the front crawl arm stroke. You can start the arm stroke by pushing off on your back with both arms at your side and then lifting one arm out of the water, keeping it straight. When your arm is at 90 degrees to your body, your hand rolls so that your thumb now points toward your feet. As your arm moves back toward your head, roll a little onto the same side and drop your shoulder a bit deeper in the water. Your hand should enter the water little finger first. Your palm should face out and your wrist should be slightly bent. Allow your hand to slice down into the water until it is 8 to 12 inches below the surface. Your hand is now in the catch position. At the same time, start lifting your other arm out of the water for its recovery phase so that it will enter the water when the first arm has finished the power phase.



Back crawl, side and front views

The back crawl can be used for recreational swimming and in competition.

The key to the power phase of the arm stroke is bending your elbow and pushing against the water with your hand toward your feet. Do not try to keep your arm straight, which will either pull it to the side of your body or up toward the surface. As your hand moves from the catch position, begin to bend your elbow so that it points toward the bottom of the lake or pool. Keep your elbow bent and pull directly toward your feet with your entire arm. In the water, keep your hand higher than your elbow. About halfway through the power phase, your elbow will be bent 90 degrees and your hand will move toward the surface of the water.

The second half of the power phase involves using your hand to push the water toward your hip and straightening out your arm. At the very end of the power phase, flip your hand downward as it passes your thigh. Your palm will be facing the bottom and your arm will be fully straightened. This downward motion of the hand will cause your body to roll to the opposite side just as your other hand is entering the water. This raises your shoulder to make it easier to recover the arm while the opposite shoulder goes deeper into the water for its catch position.

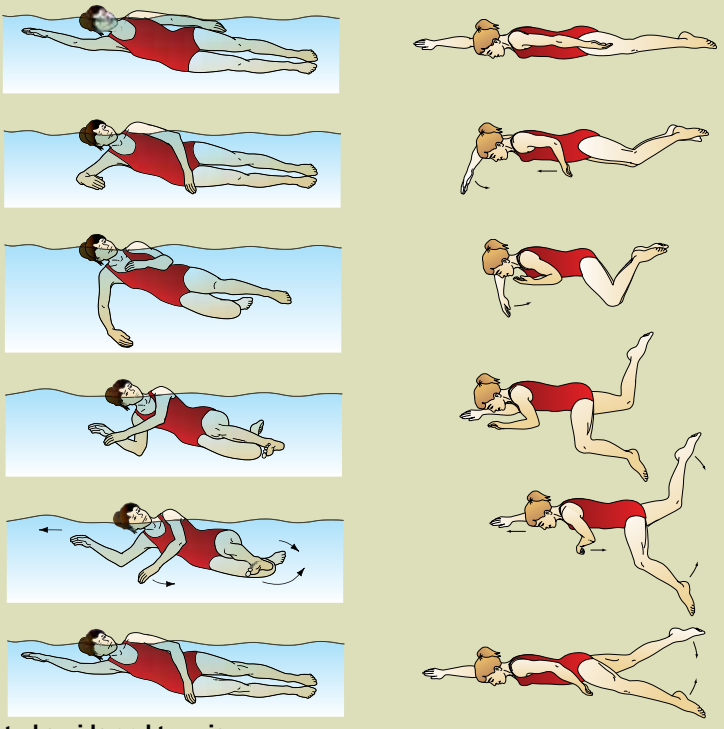
The recovery phase is intended to give the arm muscles a rest. Begin by lifting your arm straight up in the air so your thumb and back of your hand leave the water first. Relax your hand, wrist, arm, and back muscles, but do not bend your elbow. Move your arm in a half-circle motion. The opposite arm will follow the same pattern, beginning its pull as your body rolls toward that side to begin the recovery of the first arm. Your arms are directly opposite each other at all times.

Breathing and Coordination. Body position is important for the back crawl. Be sure to keep your hips up and avoid a partial sitting position. Your head should be back with your ears in the water. Avoid turning your head from side to side, because your head position serves to anchor and steady the entire stroke. To coordinate arm and leg movements, count a six-beat kick (each upward leg kick is one beat) and complete one full arm cycle in six beats. In other words, one arm should enter the water on the count of one, and the opposite arm should enter the water on the count of four. Although the back crawl is a free-breathing stroke, you should develop a breathing rhythm that feels comfortable to you. The simplest pattern is to inhale when one arm recovers and exhale when the other arm recovers.

Sidestroke

The sidestroke is a good long-distance stroke with a long, restful glide. It also introduces the scissors kick, which is used in swimming rescues. The scissors kick is mainly responsible for the forward motion of the stroke.

Kick. The scissors kick is a powerful kick that provides a resting period between arm strokes. To do the scissors kick, bring your knees together and then bend them as you bring your lower legs and heels toward the buttocks. Without pausing, move your legs into the catch position. Move your top leg forward and your bottom leg back until your legs and knees are straight. To move into the power phase, bring both legs back together with a forceful snapping motion like closing a pair of scissors. Keep your legs together during the glide position with the toes pointed back.



Sidestroke, side and top views

Arm Stroke. Start in the glide position on your side with one ear in the water and the nose, mouth, and other ear out of the water. With your body on its side, straighten the leading (bottom) arm to its full length with your ear resting on your shoulder and your palm facedown. The trailing (top) arm should rest comfortably alongside your body with the hand above the thigh. Turn the palm of the leading arm from facing down until it is vertical with the thumb on top. Begin moving the leading arm into a catch position by moving the hand in a downward direction toward the feet.

The power phase is a pull with the hand just below the top of the water and the elbow bent. Move your leading arm until it reaches the middle of your chest, while you move your trailing arm up the side of your body. Both hands should arrive at the same time in front of the upper chest. The trailing arm begins its catch and power phases while the leading arm recovers by moving back into the glide position. Reach out straight out from your shoulder with the trailing arm. Use your hand and arm to push the water toward your feet while they move to the side of your body. Keep both arms straight during the glide, or resting phase of the stroke.

Breathing and Coordination. In the sidestroke, the arm strokes and scissors kick are combined so that the legs are drawn up as the leading and trailing arms move toward the chest. To help coordinate your arms and legs in the sidestroke, remember the phrase, "pull, kick, glide." Start by moving your legs into the catch position. With your trailing arm straight and your legs apart for the scissors kick, the power phases for both the trailing arm and kick begin and end at the same time. During this time the leading arm recovers to the glide position. When you have finished both the kick and trailing arm stroke, rest and relax your muscles. Hold the glide position for three or four counts and then repeat the stroke. Breathing is easy with the sidestroke since the mouth is out of the water. Breathe in during the power phase of the leading arm and breathe out during the power phase of the trailing arm.

Trudgen

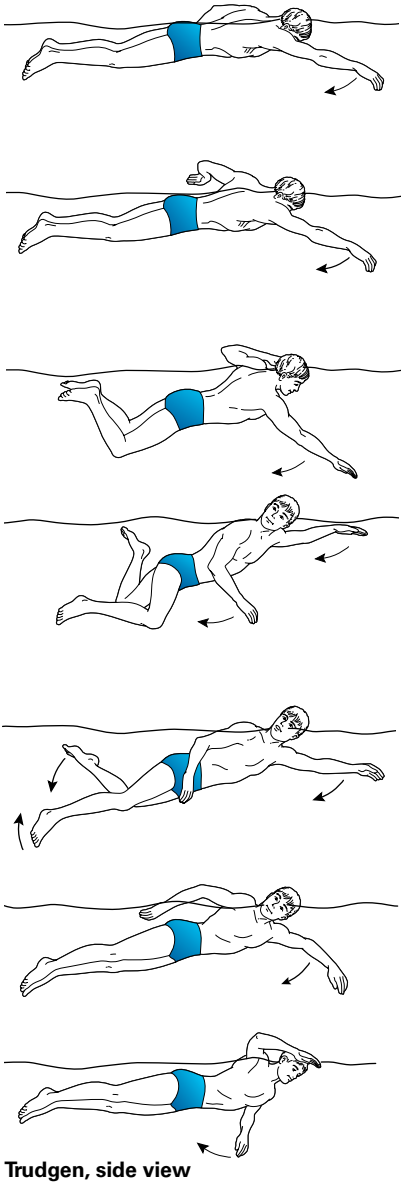
There are several variations of the trudgen, including the trudgen crawl and the double trudgen. Swimmers use the trudgen and its variations, because they take less energy than the front crawl.

Kick. The trudgen uses the scissors kick. Between kicks, the legs rest and trail in the water. The scissors kick usually is shorter in the trudgen than in the sidestroke.

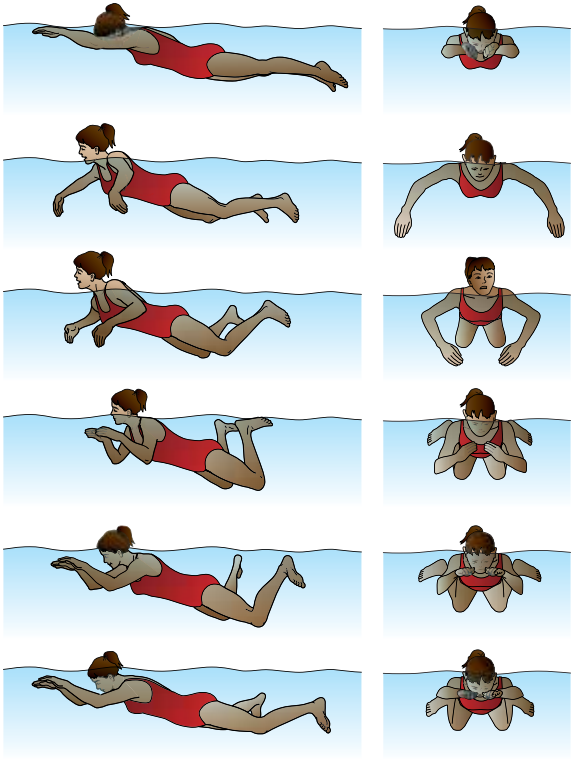
Arm Stroke. The arm strokes are the same as those for the front crawl.

Breathing and Coordination. Coordinate the arm movements and scissors kick as in the sidestroke. If you are doing the trudgen crawl, do two or three flutter kicks between scissors kicks. In the double trudgen, there are two scissors kicks for each arm cycle but no flutter kicks. Roll onto your side to breathe. As the arm on your breathing side completes the power phase and begins the recovery phase, turn on your side and take a breath.

This interesting stroke was named for English swimmer John Trudgen, who introduced the stroke in competition in 1875.



Trudgen, side view



Breaststroke, side and front views

The breaststroke is one of the oldest strokes used in Scouting.

Breaststroke

Variations of the breaststroke range from a restful distance stroke to a competitive racing stroke. With a longer glide as taught in Scouting, the breaststroke is a powerful, long-distance stroke that conserves energy and has applications in lifesaving. The stroke uses a whip kick and a shallow arm pull.

Kick. The breaststroke kick, or whip kick, starts in the glide position. Bring your heels toward the hips at about a 45-degree angle, just beneath the water's surface. You don't want to break the surface of the water. Keeping your knees bent, spread your knees until they are no farther apart than hip width. Your feet must be farther apart than your knees. Keep your ankles fully flexed and your toes pointed outward. This is the catch position.

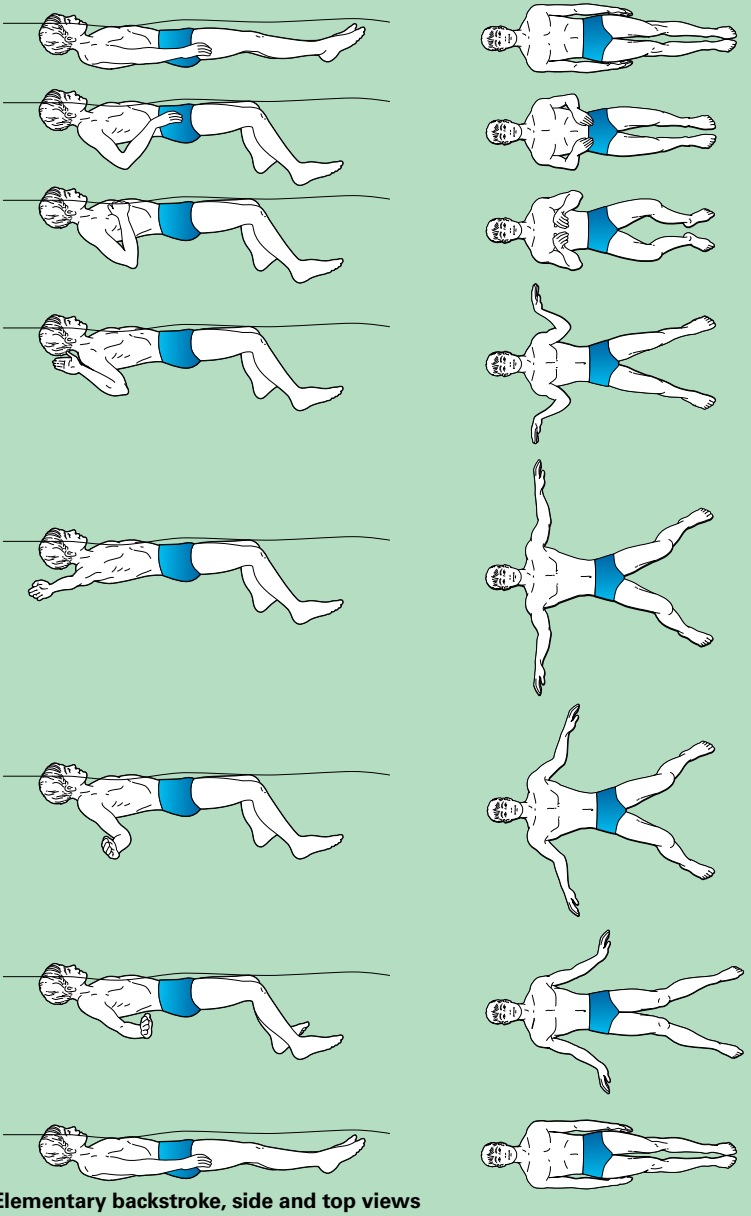
To begin the power phase, move your feet and lower legs in a whipping motion, pushing outward and backward until your legs and feet are touching in a glide position. At the end of the power phase, your toes should be pointed back and away from your body. As in the scissors kick, the speed of the whip kick should increase rapidly and continue until the end of the kick.

Arm Stroke. Start from a prone float with your arms out straight. Slightly bend your wrists and point your fingers downward. Turn your hands to a slightly palms-out position. Then bend your arms a little at the elbows as the palms and arms push out and down until your hands are farther apart than the width of your shoulders. This is the catch position. Begin the power phase by pressing your arms and palms downward until your elbows form a 90-degree angle, with your forearms pointing toward the bottom. During the power phase, your hands and forearms should always be below the elbows and your elbows should always be below your shoulders. The arm pull should feel as though you are grabbing the water ahead of you and pulling yourself forward until your head passes your hands. Begin the recovery phase by bringing your hands in together under the chin and your elbows to the sides of your body. Finish the recovery by pushing your hands forward just under the surface, fingers leading, until your arms are at their full length in a glide position.

The pattern the hands trace in the breaststroke is sometimes described as an upside-down heart.

Breathing and Coordination. While doing the breaststroke, you should exhale slowly in the water between breaths. Between the catch and the power phase, lift your chin out of the water, finish exhaling, and quickly take a breath. As your arms begin the recovery phase, place your chin and face back in the water. The water level should be right above the eyebrows. Avoid lifting your head and shoulders too far out of the water to prevent bobbing and losing forward momentum.

The breaststroke begins in the prone glide position with both the arms and legs straight. To coordinate the kick, the arm stokes, and the breathing, think of the phrase, "pull, breathe, kick, glide." As your arms complete the power phase, take a breath, and then draw your feet toward the hips. When your arms are about halfway through the recovery phase, begin the whip kick. Time the arm strokes and kick so that the arms and legs are both at their full length as the kick finishes. Rest in the prone position as your body glides through the water. When the glide begins slow down, it is time to start another stroke.



Elementary backstroke, side and top views

Elementary Backstroke

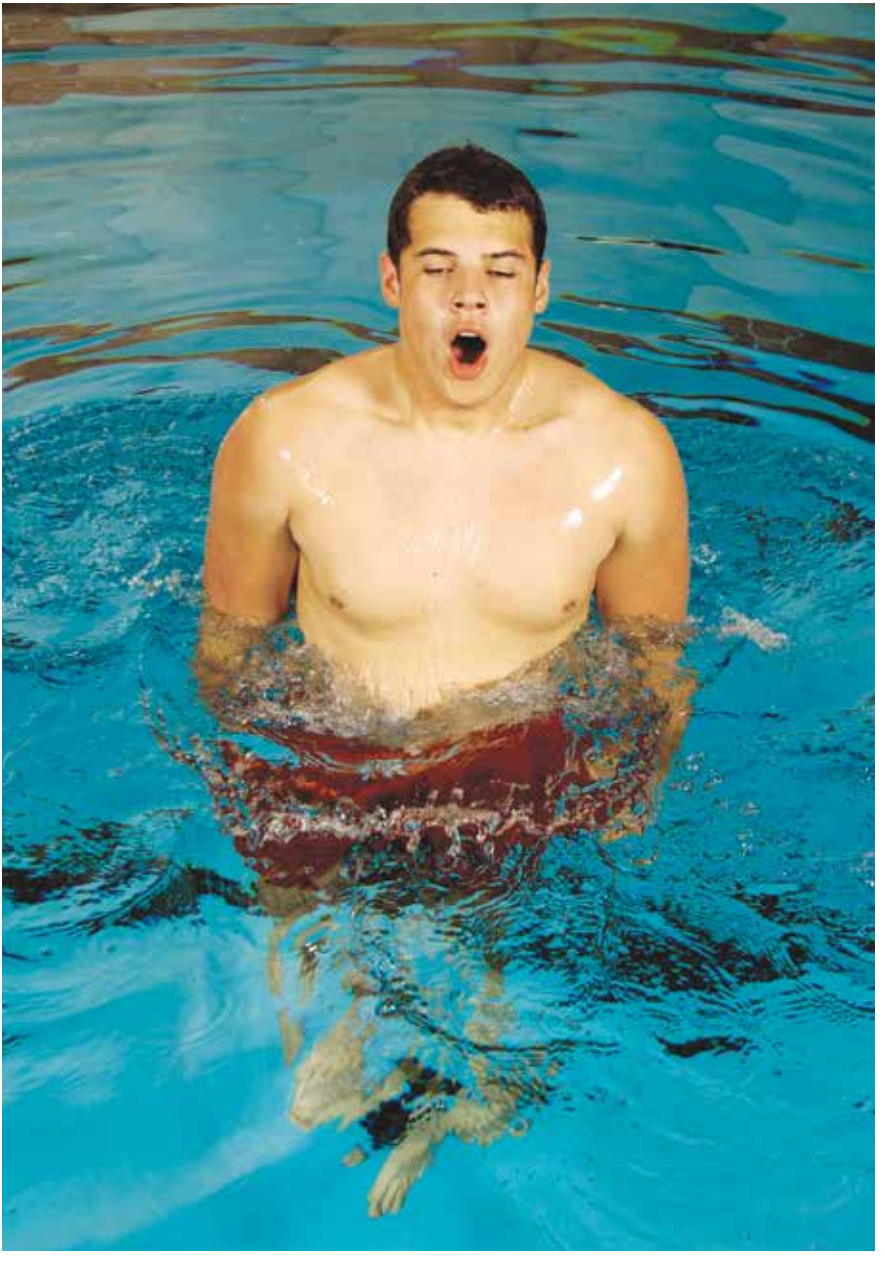
The elementary backstroke is the resting stroke for the last 50 yards of your test. Use this stroke for long-distance swimming or when you are tiring and want to rest while continuing to make forward progress.

Kick. The elementary backstroke uses the whip kick. Floating on your back, spread your knees no farther apart than hip width. Drop your heels by bending your knees. Keep your knees just below the surface. Turn your feet so your toes are pointing out and your ankles are fully flexed up. This is the catch position. To begin the power phase, move your feet and lower legs in a whipping motion to trace an oval shape. Your feet must move outward wider than the position of your knees and act like paddles to push the water behind you. Then kick with your legs ending up straight with your feet touching. Your toes should be pointed and just below the water's surface. Drop your heels down to begin the recovery phase.

Arm Stroke. The arm stroke for the elementary backstroke is simple. Start on your back in the glide position. Keep your legs straight with your toes pointed and have your arms at your sides with your hands on your thighs. Slowly move your hands either up the centerline of your chest or up the sides of your body with your elbows tucked in until your hands reach the shoulders. Without pausing, straighten out your arms with your palms facing your feet. In a single motion, sweep your arms quickly toward your feet, bending your elbows and wrists throughout the stroke to push water backward. Recover the arms by bringing your hands back up toward your shoulders.

Breathing and Coordination. In the elementary backstroke, the arms and the legs provide power at the same time. The kick takes less time than the arms because the legs move a shorter distance than the arms, and they are stronger. For these reasons, you should begin the recovery of the arms before the legs. Don't begin the kick until your arms have begun their power phase. With some practice, you should be able to time it so that you finish both the kick and arm stroke together. Strive to make your movements continuous. At the conclusion of the stroke, relax and allow your body to glide through the water for three or four counts. Don't be in a hurry. Remember, this is a resting stroke. As you finish your glide, repeat the process.

To avoid getting water in your mouth and nose, keep your forehead slightly higher than your chin as your arms push toward your feet.

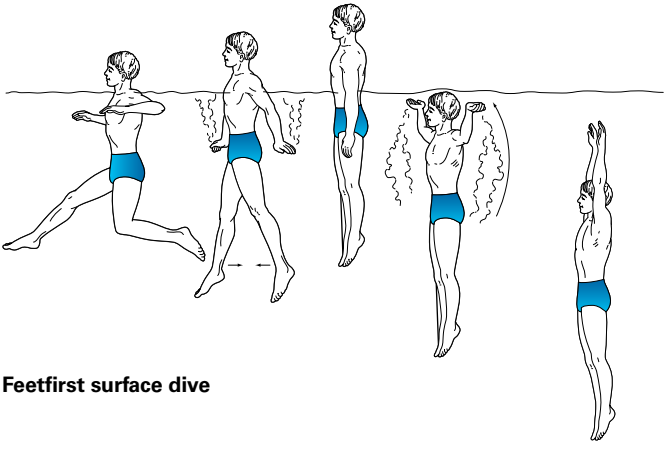


Surface Dives

If you want to swim underwater to retrieve an object or explore the bottom, a surface dive is an easy way of going down. This swimming skill is commonly used in snorkeling and lifesaving. There are two ways to do a surface dive: feetfirst from an upright position or headfirst from a forward swimming position.

Feetfirst Surface Dive

Feetfirst surface dives are particularly useful when you are uncertain of the bottom conditions where you are swimming. While treading water in an upright position, raise yourself partly out of the water by snapping your legs together in a scissors kick and pressing your hands down on the water. Then let yourself sink. As your face goes under, turn your palms out and press upward with your arms and hands. Doing this will send you down fast. Be sure to keep your hands in the water while pushing up. Keep your feet together and toes pointed to streamline your body. When you near the bottom, change to a swimming position by pulling your knees in until you are tucked. Drop your head and start an underwater breaststroke.

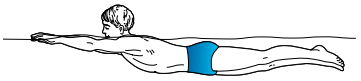


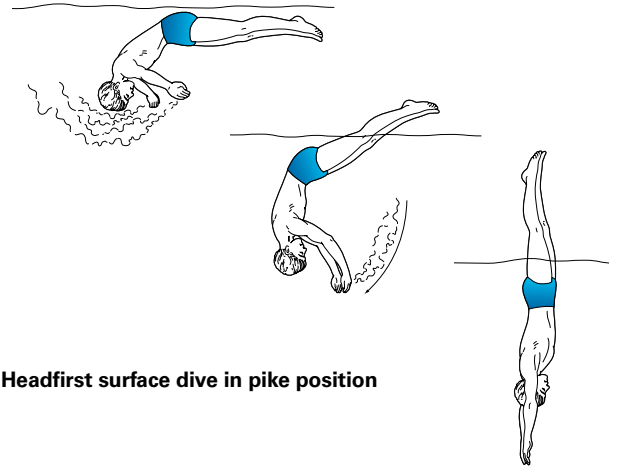
Feetfirst surface dive

Headfirst Surface Dives

The easiest way to do the headfirst pike surface dive is while moving forward with a breaststroke. As you begin a new arm stroke, keep your legs in the glide position and bend sharply at the waist with your head down so that the upper portion of your body is angled toward the bottom. Then reverse the direction of your arm stroke while lifting your legs out of the water and into the air. When you complete the reverse arm motion and leg lift, you will be in a vertical handstand position with your body straight and your arms straight and pointing toward the bottom. In this streamlined position, the weight of your legs above the water will drive you downward. It all should happen quickly in one smooth motion. Once your feet are underwater, you can begin to swim. If you want to go deeper or faster after you are completely beneath the surface, use the breaststroke, which you also can use to swim along the bottom.

A tuck surface dive is another option you can use to fulfill requirement 6b. Instead of lifting your legs as you would for a pike surface dive, pull your knees toward your chest and push them upward as you point your head and arms toward the bottom. The tuck might be a bit easier than the pike to learn at first, but you will not dive as deep or as quickly.





Headfirst surface dive in pike position

Diving Safety

If you are diving to fulfill requirements 6 and 7, remember that Scouting has specific guidelines for safe diving and elevated water entry. "Diving" refers to any water entry in which the feet do not make first contact with the water. "Elevated entry" refers to any water entry from a height more than 18 inches above the water. BSA Safe Swim Defense guidelines do not permit diving or swimming activity of any kind in water deeper than 12 feet. No elevated entry is permitted where the person must clear any obstacle, including jumping or diving over land.

In water with less than 7 feet of unobstructed depth, diving is not permitted and water entry must be feetfirst. A leaping entry is recommended where water is at or above head level. A step-down or jump-down entry from a sitting position is recommended for shallower water. Never attempt to plunge headfirst below waves at a beach.

Diving is permitted in clear water at least 7 feet deep from a dock, pier, or platform that is no more than 18 inches above the water surface.

However, if your state, city, or local community requires a water depth greater than 7 feet, it is important to abide by that mandate.

Remember that it is the weight of your legs above you that pushes you down into the water. It is important to get them up into a vertical position in all headfirst surface dives.

Steps to Diving off a Dock or Pool Deck

Diving off a dock or pool deck is the best way to enter deep, unobstructed water and be prepared to swim. Once you can hold your breath for 5 seconds underwater you are ready to learn to dive.

Diving is permitted only into clear, unobstructed water from heights no greater than 40 inches.

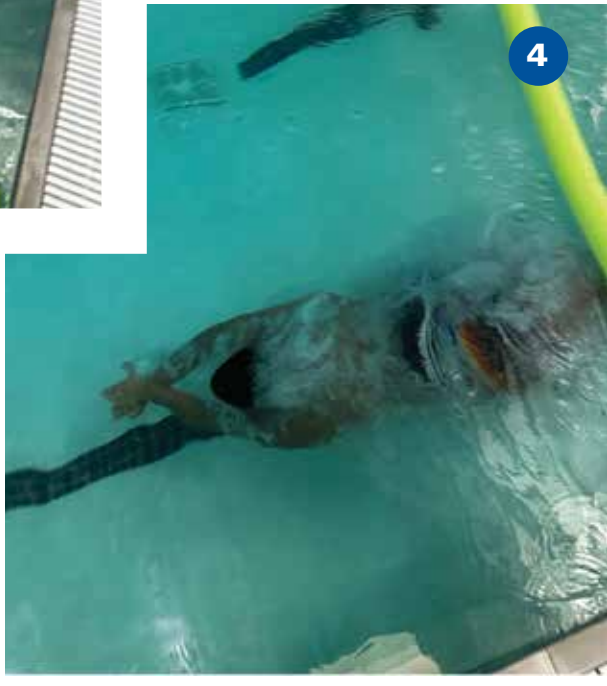
- **Sitting Dive (pictured below).** Sit on edge of deck as far back as you can, keeping your legs down against the pool side. Have someone place a pool noodle in the water about 4 feet in front of you. Put your head down with your chin touching your chest. Tuck your chin down onto your chest. Point your arms in front of your head with hands together. Your arms should cover your ears. Your hands are held together and will serve to guide you to the surface of the water once you dive in. This is called the "Arrow Position." Take a breath and slowly roll forward, entering the water hands first going under the pool noodle. Once you are past the noodle point your hands up and you will easily come to the surface ready to swim.

- **Kneeling Dive (pictured next page, top).** At the edge of the deck curl your toes over the side, griping the deck. Then kneel on one knee. Assume the Arrow Position you used with the Sitting Dive. Take a breath and slowly roll over your stationary kneel into the water, under the noodle. Don't push off the leg with your legs, just roll in.

- **Standing Dive.**
  Step 1 (pictured below). At the edge of the deck curl your toes over the side, griping the deck. Move one leg back a foot or two with the knee slightly bent. Get into the Arrow Position. Take a breath and slowly roll over the stationary leg hands first into the water going under the noodle.
  Step 2 (pictured next page). Do the same as you did in Step 1 but keep both feet at the edge of the pool with the toes griping the side. Assume Arrow Position, bent down and roll down into the water again going under the noodle and pointing your hands up to return to the surface.

It bears repeating: Dive into water that is at least 7 feet deep—even deeper if state or local regulations mandate it.

Once you are comfortable with the standing dive you can start using your legs to propel you and out a bit further into the pool for your dive, always remembering to be in the Arrow Position, and enter the water hands first then followed by your head and body. You can glide under the water as far as you want and then point your hands up to return to the surface.



Diving into shallow or unclear water is dangerous and foolish.

Swimming for Fitness and Health

Regular exercise may be the single most important thing a person can do to live a long and healthy life. Studies of people who live to great ages—into their 90s and beyond—indicate that these people have at least one thing in common: regular, consistent exercise. While exercise has a wide variety of benefits, the most remarkable are the prevention of heart disease and the strengthening of bones.

Exercise and Health

The relationship between exercise and heart disease has been investigated extensively. The results are always the same: The physically active have less heart disease. The impact of exercise on heart disease is, in part, due to its beneficial effects on the other risk factors of heart disease.

People who exercise regularly are much less likely to be overweight because exercise burns calories. Exercise reduces blood pressure, too. In fact, the combination of exercise and losing weight often allows people with hypertension (high blood pressure) to control it without taking medicines. This control may be better than was possible with medicines. Research has shown that active male joggers have lower total cholesterol than men of the same age who don't run. There is no substitute for exercise when it comes to protecting your heart.

Without enough exercise, bones become demineralized. That is, they lose their calcium and become brittle. If a person is put to complete bed rest, this process starts almost immediately and progresses rapidly. This is one reason why doctors recommend that people who have had a major operation or a heart attack resume activity as soon as possible.

Exercise is an excellent cardiovascular conditioner and is important to living better as well as longer. People who exercise regularly feel and look younger than those who do not. Improvements in muscle tone and circulation undoubtedly help physically fit people feel more energetic and give them a feeling of well-being. Moreover, research shows that healthy people are more productive at work.

If the importance of exercise is so well-known and obvious, then why do people often neglect to exercise and protect their health? The main reason is choice! Remember your Scout training and Scout Oath—what will be your choice?

The demineralization of bones has been documented in astronauts returning from space, where lack of gravity robs physical activity of its exercise value. Weak and brittle bones—a result of a lack of exercise—are also common in the aged.

Making Exercise Part of Your Life

How, when, and where you choose to exercise will depend on such things as where you live; what facilities and equipment are available to you; and your health, physical abilities, and training. But these things should determine only the type, place, and timing of your exercise, not your basic decision to exercise. Some people may go rock climbing. Others may take daily walks. For some people the choices are almost limitless. For others the choices may be fewer, but everyone can choose to exercise and can gain from doing it.

For those who are limited by choice or circumstances to one form of exercise, a full-body exercise is strongly recommended. In full-body exercise, all the muscles and joints are moved and flexed. Examples of full-body exercise include brisk walking, running, cycling, rowing, and swimming.

Swimming for Exercise

In many respects, swimming is superior to other forms of exercise because it involves all the muscles and joints, is highly aerobic, and has a very low injury rate. In addition, swimming promotes coordination, and the buoyancy effect of water limits stress to the joints.

You can improve upper body strength by working on overarm strokes, and focus on leg development with kick drills and swim sprints using the flutter kick. It's not surprising that swimming is often prescribed and used as physical therapy for paralysis, stroke, and injury victims**.** A regular swimming exercise program will help you increase stamina, polish your swimming skills, and develop an exercise program that you can keep using as you grow older.

Swimming Is a Lifetime Skill

Learning to swim a variety of strokes will provide relaxation, fun, and physical conditioning that will benefit you the rest of your life. When the skills acquired through proper instruction and practice are adapted to lifesaving techniques, they can save the lives of swimmers themselves, as well as others. And, of course, swimming at a competitive level is always challenging. Best of all, learning this lifetime skill will leave you with a sense of accomplishment and a fun way to relax with your friends.

Swimming Resources

Scouting Literature

Scouts BSA Handbook; Deck of First Aid; Emergency First Aid pocket guide; *Athletics, Emergency Preparedness, First Aid, Lifesaving, Personal Fitness, Scuba Diving, Sports,* and *Water Sports* merit badge pamphlets

With your parent's permission, visit the Boy Scouts of America's official retail website, www.scoutshop.org, for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

Books

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Thomas, David G. *Swimming: Steps to Success,* 3rd ed. Human Kinetics, 2012.

Organizations and Websites

American Red Cross
Toll-free telephone: 800-733-2767
www.redcross.org

USA Swimming
www.usaswimming.org

YMCA of the USA
Telephone: 312-977-0031
www.ymca.org

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