

SCUBA



SEA



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BOY SCOUTS OF AMERICA®



SCUBA BSA

Scuba BSA introduces qualified Boy Scout, Venturing, and registered adult participants to the special skills, equipment, and safety precautions associated with scuba diving; encourages aquatics activities that promote fitness and recreation; and provides a foundation for those who later will participate in more advanced underwater activity.

The Scuba BSA experience contains two parts—Knowledge Development and Water Skills Development. During the first part, participants learn basic dive safety information and overview skills to be used during their water experience. The Water Skills Development session introduces essential dive skills, such as mask clearing, regulator clearing, and alternate air source use.

The Scuba BSA program is conducted in clear, confined water by an instructor certified by diving organizations recognized by the BSA. Completion of Scuba BSA requirements sets the stage for additional training but does not qualify the participant to dive independently, either in confined water or open-water environments. Scuba BSA is *not* a diver certification.

SCUBA SAFETY

Scuba diving is an advanced swimming activity. Safe Swim Defense guidelines, as found in the *Guide to Safe Scouting*, apply, but must be extended to cover underwater communication, the use and care of equipment, buoyancy control, and the effects of pressure. The following discussion highlights safety issues that will be covered during Scuba BSA instruction, and also identifies important safety concerns that may not be covered in this introductory scuba experience. While Scuba BSA is designed to be educational as well as fun, it is important for you to realize that neither the material in this brochure, nor completion of the requirements, provides you with the necessary knowledge and experience to participate in any scuba activity other than additional training courses conducted by certified instructors. While the Scuba BSA program is open to qualified participants of Boy Scout age, additional scuba training as a BSA activity is limited to those 14 or older.

Qualified Supervision

Your Scuba BSA experience will be conducted by a certified instructor following standards established by the Recreational Scuba Training Council and additional BSA guidelines provided in the Information for Counselors section of this brochure.



Any additional scuba training you receive should also be conducted by an instructor certified by a recognized agency. Even though your friends may be certified as open-water divers and have access to equipment, they should not offer, nor should you accept, any invitation to dive unless you are also certified. If you and others in your unit do become certified, any dive trips as a unit must be supervised by adults with divemaster or higher rating.

Personal Health Review

Your Scuba BSA instructor will ask you to complete the Annual Health and Medical Record, No. 680-001. Certain responses on that form may require that you get a physician's approval before you are allowed to use equipment in the water. Those with chronic disease or physical disability may still be able to enjoy and benefit from a scuba experience if the instructor is aware of the condition and approval has been obtained from a licensed physician.

You will learn during Scuba BSA or more advanced instruction that you should postpone diving activities if you are suffering from a cold or sinus condition that causes temporary congestion. This is necessary because of the effects of pressure, as discussed elsewhere in this pamphlet.

Safe Area

Instruction for Scuba BSA will be done either in a pool or at an established waterfront swimming area with pool-like visibility.

Safety in open water requires consideration of several factors such as water clarity and temperature, currents, surf, boat traffic, and marine life, including vegetation. Learning how to deal with such variables is an important aspect of diver certification programs.

Emergency Preparedness

Safe Swim Defense specifies lifeguards and lookouts as members of a rescue team that recognizes and deals with emergency situations. Those functions will be assumed by your instructor and his or her assistants during Scuba BSA instruction.

The Scuba BSA requirements will introduce you to techniques for sharing air while underwater. Additional skills to aid a buddy in distress are covered in more advanced courses. It is important that you receive such training before you dive in open water.

The divemaster or another person providing underwater supervision during open-water dives will be trained to handle emergencies. In addition, group dives often have surface support personnel who are also prepared to assist divers in distress.

Ability

You must first complete the BSA swimmer classification test before you work on other Scuba BSA requirements. Initial comfort and confidence in the water, as indicated by reasonable swimming ability, is a first step to enjoyment of the underwater world opened by the use of scuba. You will need to gain additional abilities through instruction and experience before you become a competent scuba diver.

Buddy System

Skilled divers never dive alone. The buddy system allows two people to enjoy an aquatics activity together while each provides a critical margin of safety for the other. Each buddy must constantly be aware of the condition and circumstances of his buddy and always ready to call for aid or to assist if needed. Before a dive, buddies help each other fit and check their equipment. Your use of the buddy system for scuba diving will begin with Scuba BSA instruction.

Communication

The ability to communicate with each other is an important part of the buddy system. Scuba divers seldom have the special equipment needed to speak to one another while underwater. It is therefore important that you learn the standard hand signals used by scuba divers. Your instructor will teach you these as part of the Scuba BSA program. Photos of the signals are included in this pamphlet as a learning aid.

Equipment

Safe diving requires that you know how to check, use, and maintain special equipment. Scuba BSA will introduce you to the proper use of basic scuba equipment. Additional knowledge of your equipment, as provided in certification courses, is needed before you are ready for open-water diving.

Buoyancy Control

Buoyancy control is important for safe, as well as enjoyable, diving. Certified divers are able to “hang” without movement at any given depth. That is, they don’t need to use their fins to keep from either sinking or popping to the surface. This is done by adding and subtracting air from a buoyancy control device (BCD.) Scuba BSA will introduce you to the use of a BCD. Your BCD can also be used as an emergency flotation device at the surface.

Understanding Pressure

An apparently simple action such as holding your breath during an ascent can cause problems due to the interactions of water and air pressure with your body. You will be introduced to proper compressed air breathing techniques and how to perform a safe ascent as part of Scuba BSA. Other critical aspects of safe open-water diving, such as how long you can safely remain at what depth, are not covered during Scuba BSA instruction.

Discipline

Safety procedures are effective only when they are followed. It is the joint responsibility of both the dive supervisor and each individual to maintain safe attitudes and actions. Your instructor and buddy should both be able to assume that you are trustworthy, helpful, and obedient.

Snorkeling BSA

Scuba provides exceptional freedom to explore the underwater world. However, there is often much to see near the surface. While you wait for the opportunity to expand your scuba skills, you may wish to earn Snorkeling BSA.



COMMUNICATION

These are standard scuba hand signals that are useful both above and below the surface. You will learn these as part of your Scuba BSA experience. Hand signals used with express permission of International PADI, Inc. © International PADI, Inc.



Stop; hold it; stay there.



Something is wrong.



OK? OK!



OK? OK! (glove on)



Distress; help!



OK? OK! (on surface at distance)



OK? OK! (one hand occupied)



Danger!



Go up; going up



Go down; going down



Low on air!



Out of air!



Buddy breathe or share air

COMMUNICATION



Come here.



Me or watch me.



Under, over, or around



Level off; this depth



Go that way.



Which direction?



Ears not clearing.



I am cold.



Take it easy; slow down.



Hold hands.



Get with your buddy.



You lead, I'll follow.



UNDERSTANDING PRESSURE

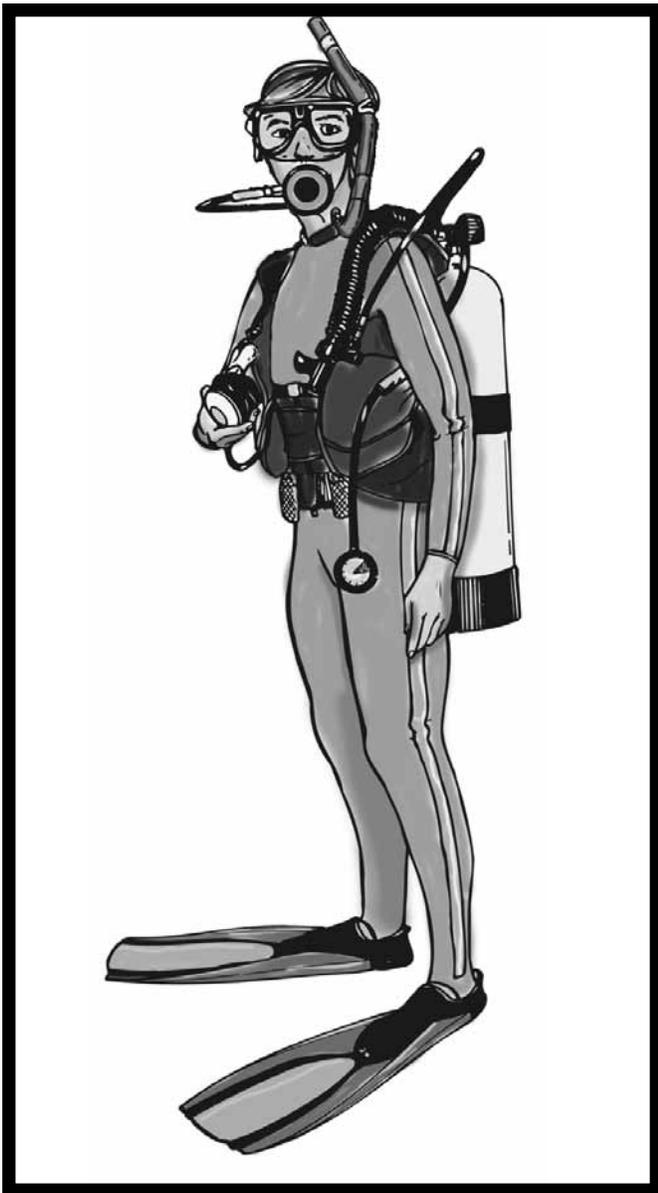
If you dive rapidly to the bottom of a swimming pool without a scuba tank, you are likely to notice pressure, or pain, against your ears. If you swallow, or wiggle your ears, the feeling may go away.

Your body is accustomed to a pressure of one atmosphere (the weight of the column of air from sea level to outer space) of around 14 pounds per square inch. Since water weighs much more than air, pressure underwater increases rapidly with depth. Every 33 feet or so, you add another atmosphere. As you descend, the water pressure outside your chest squeezes your lungs, and raises the air pressure inside them. If air is free to move from your lungs to your inner ear, the pressure of the air on the inside of your eardrum will match the pressure of the water on the outside, and you won't feel any difference in pressure. If the Eustachian tubes that connect your lungs to your inner ear are blocked, the air pressure in your inner ear remains the same as that at the surface, and pain will warn you of the mismatched pressure.

Sound complicated? Don't worry; even if you don't understand the details, your instructor will still show you how to equalize pressure in your ears. However, if you have a cold with nasal or sinus congestion, you may not be able to do so, and you should not dive until the congestion clears. You will not feel pain or discomfort if you equalize properly. If you do feel discomfort in your ears, stop descending and signal your instructor.

If you dive to the bottom of the pool while breathing from a scuba tank, you still need to clear your ears, but the situation is different. The pressure in your lungs increases not because they are squeezed, but because your air supply is under pressure. You breathe through a special valve, or regulator, that changes the air pressure from your tank to match what you need at a given depth.

Breathing air under pressure can cause problems if you hold your breath as you change depth. You need to release the pressure in your lungs as you ascend to prevent possible damage to delicate lung tissue. That leads to the most important rule while scuba diving: **Never hold your breath.**



The volume of air in your BCD controls your buoyancy. As you change depth, the water pressure changes, and air in the BCD expands or contracts. You either need to add or remove air to control your buoyancy at a new depth.

You probably know from your experience with carbonated drinks that liquids can hold dissolved gases. The greater the pressure, the more gas the liquid can absorb. If you breathe air under pressure for long periods, your blood will absorb some of the air. If the pressure of the air you are breathing is then reduced too quickly, air bubbles may form in your blood and cause various decompression problems. You don't need to be overly concerned with such problems for the times and depths you will encounter with Scuba BSA. However, you risk serious injury if you use scuba equipment on your own without proper training and understanding of the effects of pressure.

EQUIPMENT

A **mask** provides an air space to improve vision. Mask designs allow for pressure equalization.

A **snorkel** provides an alternate breathing technique at the surface.

A **regulator** supplies air on demand at the proper pressure.

A **buoyancy control device (BCD)** allows the diver to remain stationary at a given depth.

Air can be added to the BCD either from the tank or orally, using an **inflator**.

A **pressure gauge** measures the air supply in the tank.

Other instruments mounted on a console, hose, or wrist include a **depth gauge** for measuring depth, a **compass** for navigation, and a **dive computer** that monitors how long the diver can safely spend at a given depth.

An extra regulator, or **octopus**, provides a secondary air source from the same tank.

A **weight belt**, in combination with the BCD, adjusts buoyancy.

A **valve** at the top of the **tank** supplies high-pressure air to the regulator via a hose.

Fins greatly improve the power from swimming.

Protective clothing may include booties, gloves, skins, and a partial wetsuit or a full wetsuit.

Pressure gauges come in a number of designs, but all indicate when the air supply is low.





FLORIDA NATIONAL HIGH ADVENTURE SEA BASE

The Florida National High Adventure Sea Base in the Florida Keys offers several exciting programs, including scuba certification. For more information, visit www.bsaseabase.org.



BSA SCUBA POLICY

The BSA scuba policy recognizes scuba industry standards and implements them by using outside agencies for training and certification.

Training and Supervision

Any person possessing, displaying, or using scuba (self-contained underwater breathing apparatus) in connection with any Scouting-related activity must be either currently certified by a recognized agency or enrolled in an instructional scuba program, such as Scuba BSA or Scuba Diving merit badge, which must be conducted by

an insured recreational diving instructor in good standing with a recognized agency and approved by the council.

Recreational diving activities by BSA groups must be supervised by a responsible adult currently certified (renewed) as a divemaster, assistant instructor, or higher rating from a recognized agency. Dive environments, equipment, depths, procedures, supervision, and buddy assignments must be consistent with each individual's certification.

Because dives by recreational divers may be infrequent, the divemaster or instructor supervising a BSA scuba activity should screen participants prior to open-water activities and provide remedial instruction and practice as appropriate. Such remedial instruction and practice should be in accordance with the policies and standards of the divemaster's or instructor's agency for Scuba Review, Scuba Refresher, or similar program.

Diving using surface-supplied air systems is not authorized in connection with any BSA activity or facility except when done under contract by commercial divers.

Age-Appropriate Restrictions

Youth members in Cub Scouting, including Webelos Scouts, are not authorized to use scuba in any activity.

Boy Scouts may participate in the introductory Scuba BSA program and may obtain open-water certification as part of Scuba Diving merit badge.

Varsity and Venturing groups may participate in introductory and certification scuba programs conducted by recognized agencies appropriate to their ages and current levels of certification.

Standards of the recognized scuba agencies require students for open-water certification programs to be at least 15 years of age but allow special certification programs for younger students. Since all instruction for BSA scuba programs must be conducted by professionals certified by a recognized agency, additional agency-specific, age-related restrictions and protocols apply to students under 15 years of age.

Boy Scouts, Varsity Scouts, and Venturers may participate in recreational group dives as unit, district, or council activities, provided such dives are consistent with their certifications and under direct, on-site supervision of a responsible adult currently certified as a divemaster, an assistant instructor, or a higher rating from a recognized agency.

The divemaster or instructor supervising a recreational dive by a BSA group must implement the following policies for all divers under 15 years of age, as well as any additional junior diver restrictions and protocols adopted by that person's certifying agency:

- Depths are limited to 40 feet for divers under 12 years of age and to 60 feet for divers 12 to 14 years of age.
- Each diver under 15 years of age must have an adult buddy certified as an open-water diver who is either the junior diver's parent or an adult approved by the parent.
- Additional divemasters or instructors are present to maintain a ratio of one trained supervisor to four buddy pairs (eight divers) containing one to four divers under 15 years of age.

Medical Contraindications

Each scuba training agency recognized by the BSA requires a specific health history form prior to enrollment in a certification program. The BSA requires review and approval of the completed form by a physician even

if the scuba agency itself does not require physician approval. Various risk factors identified on the forms may exclude a person from scuba training, either temporarily or permanently. Risk factors include, but are not limited to, ear and sinus problems, recent surgery, spontaneous pneumothorax, asthma or reactive airway disease (RAD), seizure disorders, diabetes, leukemia, sickle-cell disorder, pregnancy, panic disorders, and active psychosis.

The divemaster or instructor supervising a BSA recreational scuba activity must review the health information for each participant that is required annually of all BSA members on the Annual Health and Medical Record, No. 680-001, and evaluate risk conditions using medical standards consistent with those used by his or her certifying agency.

Additional tests or physician consultations may be required to confirm fitness for diving. Consultation with medical specialists knowledgeable about diving medicine also may be needed for participants taking psychotropic drugs for treatment of attention deficit disorder, depression, or other conditions.

Scuba diving is prohibited for the following conditions:

- Use of medication to control seizures or seizure occurrence within the past five years
- Use of insulin to control diabetes
- History of asthma or RAD unless resolution confirmed by methacholine testing (People who have been asymptomatic and medication free for the previous five years are exempt from the methacholine testing requirements.)

The scuba agencies recognized by the BSA may allow exceptions to general medical prohibitions based on individual diving fitness evaluations by a medical specialist who is knowledgeable about diving medicine. Scouts, parents, dive supervisors, and physicians with questions or concerns about diving with specific medical conditions should consult the Recreational Scuba Training Council (RSTC) Guidelines for Recreational Scuba Diver's Physical Examination and the Divers Alert Network (DAN) at www.diversalertnetwork.org. DAN medical professionals are available for nonemergency consultation by telephone at 919-684-2948 during business hours or through the contact form on the Divers Alert Network website.

Council Programs

When scuba diving is taught in connection with any local council program, instructors should provide the training on a contract basis. Such instructors should have a dive store or another commercial affiliation that provides liability insurance coverage. Direct employment of scuba instructors is not recommended.

Local council programs may not compress or sell air for scuba use, or sell, rent, or loan scuba equipment (e.g., scuba cylinders, regulators, gauges, dive computers, weights, or BCDs). All air and equipment for local council program use must be obtained from professional sources (e.g., dive stores, resorts, dive boats, etc.) affiliated with a scuba agency recognized by the BSA.

Scuba equipment may be used by certified summer camp aquatics program personnel for installation and maintenance of waterfront equipment, or for search and recovery operations. Search and recovery could include lost equipment, as well as rescue efforts.

Recognized agencies are:

- PADI: Professional Association of Diving Instructors
- NAUI: National Association of Underwater Instructors

- SSI: Scuba Schools International
- IDEA: International Diving Educators Association
- PDIC: Professional Diving Instructors Corporation
- SDI: Scuba Diving International
- YMCA Scuba Program (discontinued in 2008, but certification cards are still recognized)
- NASDS: National Association of Scuba Diving Schools (merged with SSI, but certification cards are still recognized)

In addition to the agencies listed by name, any current member of the World Recreational Scuba Training Council (WRSTC), which includes all Recreational Scuba Training Council (RSTC) members, is also recognized.

Other agencies wishing to be recognized by the BSA may contact the Outdoor Programs Team of the national office. Recognition by a certifying body such as the RSTC or European Underwater Federation (EUF) that the agency adheres to ANSI/CEN/ISO standards would be expected.

For the most recent version of the BSA Scuba Policy, visit the *Guide to Safe Scouting* at www.scouting.org/scout-source/healthandsafety/gss/toc.aspx.



SCUBA BSA APPLICATION

Name of applicant _____

Unit No. _____ Council _____

Name of counselor* _____

Agency qualification and scuba instructor number* _____

Counselor signature indicating completion of all requirements _____

Date of completion _____

REQUIREMENTS

1. Before doing other requirements, successfully complete the BSA swimmer test. To begin the test, jump feetfirst into water over the head in depth, level off, and begin swimming. 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.
2. Discuss the importance of using the buddy system at all times while scuba diving. Explain that a dive buddy is there to assist with the donning and doffing of equipment, to lend assistance in case of emergency, and to share in the underwater experience. Remember, always dive with a buddy—**Never dive alone!**
3. Review hazards associated with scuba diving, including causes of decompression incidents, and safety procedures to avoid them. Explain the importance of never using scuba equipment unless you are enrolled in a training exercise, or have completed a diver certification program, taught by a certified instructor.

By the end of a Water Skills Development session, the participants will be able to meet the following requirements in clear, confined water:
4. State the purpose of the following pieces of basic diving equipment: mask, fins, BCD, BCD inflator, regulator, air gauge, and alternate air source.
5. Describe how to locate the air gauge, and explain how to recognize the “caution zone” on it.
6. Don and adjust mask, fins, snorkel, BCD, scuba, and weights with the assistance of a buddy, an instructor, or a certified assistant.
7. While underwater, demonstrate and recognize the following hand signals: OK? OK!; Stop; Up; Down; Out of air; Come here; Ears not clearing; Slow down/Take it easy; Something is wrong; Watch me; Check your air supply.
8. Inflate/deflate a BCD at the surface using the low-pressure inflator.
9. In shallow water, demonstrate proper compressed air breathing habits; remember to breathe naturally and not hold the breath.
10. Clear the regulator while underwater using both exhalation and purge-button methods, and resume normal breathing from it.
11. In shallow water, recover a regulator hose from behind the shoulder while underwater.
12. In shallow water, clear a partially flooded mask while underwater.

13. Swim underwater with scuba equipment while maintaining control of both direction and depth, properly equalizing the ears and mask to accommodate depth changes.
14. While underwater, locate and read submersible pressure gauge and signal whether the air supply is adequate or low based on the gauge's caution zone.
15. In shallow water, breathe underwater for at least 30 seconds from an alternate air source supplied by the instructor.
16. Demonstrate the techniques for a proper ascent.

*The counselor for Scuba BSA must hold an instructor rating and be in current teaching status with PADI, NAUI, SSI, or another member of the RSTC in accordance with BSA scuba policies. Instruction must meet the minimum training standards for introductory scuba experiences set by the RSTC and guidelines provided in the Scuba BSA pamphlet, No. 430-515. BSA scuba policies are also provided in the *Guide to Safe Scouting*.

INFORMATION FOR COUNSELORS

Counselors for Scuba BSA must hold current scuba instructor certification from PADI, NAUI, SSI, or other RSTC member organizations. Instruction must comply with RSTC standards for introductory scuba experiences. These minimum standards include instructor to participant ratios. In a pool, the ratio is eight participants per instructor. In a confined waterfront setting, the ratio is four participants per instructor. Ratios may be increased by two participants if the instructor is assisted by someone certified as a divemaster or assistant instructor.

A second adult who understands the procedures should be present in case the instructor becomes incapacitated. Two-deep adult leadership is also required by BSA Youth Protection policies.

Before participants are allowed in the water, they must complete an Annual Health and Medical Record designed for scuba activities. Instructors should use standard forms advocated by their certifying agency.

Skill instruction must be conducted in clear, confined water. A swimming pool is recommended. Scuba BSA is ideally suited to winter programs using indoor pools. Two 45-minute sessions are recommended for instruction, practice, and completion of requirements.

Although Scuba BSA is similar to introductory scuba experiences offered by various RSTC member organizations, those programs are not substitutes for Scuba BSA. All requirements must be completed as stated on the application form. The counselor may not omit, vary, or add requirements. In particular, Scuba BSA has a prerequisite swimming requirement, is only available to youth and adults registered in the Boy Scouting or Venturing programs (minimum age around 10½), and does not include the option of an open-water dive.

Local council programs may not compress or sell air for scuba use, or sell, rent, or loan scuba equipment. All air and equipment for local council Scuba BSA programs must be obtained from properly licensed sources, unaffiliated with the Boy Scouts of America and under the supervision of PADI, NAUI, SSI, or other RSTC-approved and certified scuba instructors.

Individuals completing the Scuba BSA requirements qualify for a recognition card and patch. The counselor or unit leader should submit the completed award application to the local council service center.



BOY SCOUTS OF AMERICA
1325 West Walnut Hill Lane
P.O. Box 152079
Irving, TX 75015-2079
www.scouting.org

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