Confédération Mondiale des Activités Subaquatiques
World Underwater Federation

Snorkel Diver
Training Program

THE CMAS INTERNATIONAL SNORKEL DIVERS CERTIFICATES SYSTEM

The CMAS has established standards which form the basis of a system of International Snorkel Divers Certificates which are recognised by all national federations and other bodies which are members os the CMAS Technical Committee.

These standards describe the knowledge and skills required in order for a snorkel diver to be granted the appropriate CMAS International Snorkel Divers Certificate.

The certificates may be awarded as an equivalent to a national qualification held by the snorkel diver, or may be awarded directly by a CMAS Recognised Diving School og by certain national federations.

The standards describe three grades of snorkel divers:
- One Star Snorkel Diver
- Two Star Snorkel Diver
- Three Star Snorkel Diver

Details of the standards will be found in the CMAS publication "Standards and Requirements for Snorkel Divers".

In most cases snorkel divers will be trained in accordance with the training programmes used by their national federation, and these will have been closely considered during their process of granting approval for International Certificate Equivalents.

The Snorkel Diver Training Programmes outlined here are intended to:

1. Act as an example to Federations wishing to become members of the CMAS Tecnical Committee, and aiming to issue snorkel divers certificates which will have equivalent CMAS Internatio nal Snorkel Divers Certificates.

2. Indicate to existing members of the Technical Committee the current standards of training considered necessary in order to reach the minimum levels of proficiency required for the award of CMAS International Snorkel Divers Certificates.

3. Act as a basis for the training programmes to be adopted by CMAS Recognised Diving Schools for courses resulting in the direct issue of CMAS International Snorkel Divers Certificates.

The programmes are described as a sequence of Theoretical an Practical lessons, where possible the practical lesson builds on theoretical knowledge already taught to the student. However, The One Star course consist only of a sequence of Practical lessons, because the theoretical knowledge needed for this certificate can be learned during the practical lessons. Suggestions are offered on the time each lesson can be expected to occupy in a normal programme.

The lessons have been given codes to describe their place in the programmes. For example, 2T6 is a theoretical lesson (T) for Two Star Snorkel Diver (2) and is the sixth in the sequence (6). 1P2 is therefore the second practical lesson in the one star snorkel diver programme.

DEFINITIONS OF SNORKEL DIVER GRADES

The system consist of three levels of snorkeldiver qualification. In all cases, increased competence and experience is indicated by an increasing number of stars in the description and the emblem.

ONE STAR SNORKEL DIVER
A snorkeldiver who is competent in the safe and correct use of relevant snorkeldiving equipment used in a swimming pool. The snorkeldiver is familiar with relevant personal equipment and its use in a sheltered open water training area. The snorkeldiver is ready to gain further open water training in the company of an experienced snorkeldiver.

TWO STAR SNORKEL DIVER
A snorkeldiver who has gained some open water diving experience. The snorkeldiver is considered ready to take part in dives with other snorkeldivers, under supervision of a dive master. The CMAS 2 star snorkeldiver is considered trained.

THREE STAR SNORKEL DIVER
A fully trained snorkeldiver who has gained considerrable experience in open water diving under various conditions. The snorkeldiver is considered competent to be used as a standby diver and assist the dive master in open water dives.

CMAS ☆ SNORKEL DIVING TRAINING

TABLE OF CONTENTS:

CMAS ☆ SNORKEL DIVER	INTRODUCTION TO SNORKELDIVING.
1P1	

TIME: 45 min.

PURPOSE: For the student to have tried the basic equipment, and to show that he can swim normal freestyle. After the lesson, the student should know enough about basic equip ment to be able to buy his own.

TOPICS: Two hundred metres freestyle without basic equipment.
Adjusting the equipment. Explain the different fins, masks, and snorkels.
Explain the following signs: OK , UP, DOWN. Mask de-fogging.
Pressure equalization. Use of mask on the surface. Fitting the snorkel. Breathing on the surface and clearing the snorkel. Adjusting the fins. Practice swimming with fins- remember to stretch the legs. Treading water.

REMARKS: Use the buddy system. Divide the students into buddy pairs.

IDEAS: Offer to help the students with purchasing equipment. If possible, make an agreement with a diving shop to loan basic equipment for the first lesson, so the students will be able to see equipment from various manufacturers.

CMAS ☆ SNORKEL DIVER

1P2

DIFFERENT DIVING AND SURFACING TECHNIQUES.

TIME: 45 min.

PURPOSE: To dive and ascend correctly, both jackknife (head first) and feet first descents, along with shallow surface dives.
After the lesson, the student will know how to dive and surface correctly.

TOPICS: Adjustment of equipment.
200 metre swimming with fins on the surface.
Jack-knife dive.
Ascent technique.
Feet first dive.
Shallow dive.
Easy exit from the water.

REMARKS: Use the buddy system. Divide the students into buddy pairs.
Make sure that finning is done with stretched legs.
Demonstrate how easy it is to dive to the bottom (3-4 metre) using the jack-knife (head first) technique. Remember that the legs have to be out of the water after bending at the waist, in order to descend easily. Explain why it is a good idea to hold an arm above the head and rotate during ascent.
Jack-knife (head first) dive is the best technique if you want to make a deep dive. The feet first dive technique is good if you want to descend quickly for example due to an approaching boat.

REMEMBER: **Inform the students about the dangers of hyperventilation. You should *never* inhale more than a few times. If you inhale many times (hyper-ventilation), you run the risk of suddenly passing out.**

IDEAS: Talk about pressure equalization (ear squeeze).

CMAS ☆ SNORKEL DIVER

1P3

CLEARING OF MASK AND SNORKEL.
ROLLS.

TIME: 45 min.

PURPOSE: To teach the student how the mask is emptied.
Also to ensure that the student is familiar with the snorkel clearing.
To teach the student how to do forward and backward rolls.

TOPICS: Repeat diving and surfacing.
Repeat snorkel clearing.
Emptying of the mask in shallow water, where all can touch the bottom.
Emptying of the mask in deep water, 2-3.5 metre water.
Forward roll.
Backward roll.

REMARKS: Remember that there are 2 ways to clear a snorkel, the snorkel can be vertical, or the head is laid back so the snorkel is nearly horizontal. It is most difficult to clear the vertical snorkel. If the head is laid back, the water almost runs out on its own.
Mask emptying in shallow water: Divide the students into buddy pairs, one holds the other underwater. The buddy who is under water lifts the mask so water comes in. Then the mask is emptied.

REMEMBER: **Tell the students to use the OK sign when the mask has been emptied and they wish to surface. Mask emptying in deep water is practised most easily by making a jack-knife (head first) dive, lifting up the mask so it becomes full of water, and then clearing it. Demonstrate both how the mask is emptied and how a roll is most easily done.**

IDEAS: To practise diving, place different items that have to be brought up on the bottom (possibly the snorkel can be used), it is often a little more fun when there is something to dive for.

CMAS ☆ SNORKEL DIVER

1P4

FORWARD AND BACKWARD ENTRIES.
SWIMMING WITHOUT A MASK.

TIME: 45 min.

PURPOSE: To teach the student forward and backward entries. Jumping is often the easiest way to get into the water in open water, whether from a boat or a bathing jetty.

TOPICS: Vertical entry, where the diver submerges completely.
Stride entry, where the legs are apart.
Backward roll entry.
All entries are done in the deep end of the pool from the pool edge.
If it goes well, let the students try from a starting block.
Swimming with the mask on the forehead, while breathing through the snorkel.

REMARKS: The students must enter the water one at a time, so that errors can be corrected immediately.
Remember to hold on to the equipment.

IDEAS: After the jumping exercises, for example, a little relay race could be conducted, beginning from the edge and then swimming 50 metres. The relay race could also include a jack-knife dive.

CMAS ☆ SNORKEL DIVER

1P5

DIVING AFTER OBJECTS. SURFACE SIGNALS.
PUTTING EQUIPMENT ON AT THE SURFACE.

TIME: 45 min.

PURPOSE: To teach the students the best way to dive to the bottom in the deep end of the pool.
To teach the students how all the surface signals are used.

TOPICS: Practice and improve the jack-knife diving technique.
Hold the breath for 20 seconds under water.
Retrieve objects from the bottom.
Possibly the students can place part of their equipment on the bottom and pick it up, or put it on.
The meaning of the diving flag.
The surface signal 'I would like to be picked up'.
The surface signal 'Danger or panic'.
The surface signal 'Large OK sign with both arms'. (Not CMAS Signal).
Repeat entries from a starting block.
Putting on basic equipment on the surface.

REMARKS: Let the students warm up before they begin to dive to the bottom, as the breath can be held longer after a warm up period. It is therefore a good idea to start with shallow diving, over a distance of 10-15 metres. Afterwards one can practise, several times, holding the breath for 20-30 seconds.
Then practice diving to the bottom.
Bring a diving flag along, set it up, and explain where it is used.
Demonstrate and practise all surface signals.

IDEAS: Place some items on the botttom that the students can collect. It is often more fun and the students learn more quickly if there is something to dive for. Use for example following items to dive for: bolts (8-12 mm thick), small lead weights, like those used in fishing.
Also have some things that stand up a little from the bottom, so those who cannot dive so deep can also pick some things up. It can be a cork that is tied to a lead weight, or a piece of wood that is firmly tied to a lead weight.

CMAS ☆ SNORKEL DIVER

1P6

LIFE-SAVING.

TIME: 60 min.

PURPOSE: To teach the students how to save a snorkeldiver or a swimmer, who is either tired or unconscious, by using different life-saving methods.

TOPICS: Life-saving of a swimmer, that is, a person without equipment. The rescuer is wearing snorkel-diving equipment.
Life-saving of an unconscious swimmer.
Life-saving of a tired snorkeldiver. Both are wearing snorkeldiving equipment.
Life-saving of an unconscious snorkel-diver.

REMARKS: Use the buddy method, where they take turns acting as rescuer and victim.
Talk about free air passages, it is important that the head is above water.
If the casualty is on his back, remember to remove the snorkel and preferably also the mask, as this eases breathing.
Remember the danger signal.
Demonstrate how to save a person from the bottom, however the students do not need to be able to do this.
Demonstrate how an unconscious person is most easily brought to land, if the shore is steep, as in a swimming pool.

IDEAS:

CMAS ☆ SNORKEL DIVER

1P7

UNDERWATER EXERCISES.

TIME: 45 min.

PURPOSE: To show the student what the things that have already been learned can be used for. In addition the students gets more used to the water with games and exercises.

TOPICS: **Lifting items:**
Place for example a weight belt or an object weighing 5-7 kg on the bottom. Tie an upside-down bucket or a plastic bag to it. The students then use their snorkels to blow air into the bucket or bag in order to lift the item. After it is brought to the surface it can be assisted to the shallow part of the pool.

Underwater exercises:
Lay out an exercise course with different exercises.
Put basic equipment on the bottom, dive after it.

REMARKS: Explain the danger of hyperventilation. Never take more than 2-3 deep breaths prior to a dive.

The bucket should be able to hold about 10 litres.

IDEAS: A relay with 2 weight belts and 2 buckets could also be set up, each team would have to raise and assist the belts to the shallow part.

CMAS ☆ SNORKEL DIVER

1P8

USE OF OPEN-WATER EQUIPMENT.

TIME: 60 min.

PURPOSE: To teach the students how to dive with complete open-water equipment.

TOPICS:
The suit and its function.
The surface buoy, its function and fastening.
The life-vest and its fitting.
The weights, release mechanism and fitting.
Balancing.
Surface swimming.
Diving.

REMARKS:
Explain about the suit, how to clean, maintain and dry it.
Explain about the surface buoy.
Divide the students into buddy pairs and let them help each other to put on the equipment.
Start in the shallow end of the pool, where everyone can touch the bottom.
Afterwards in the deep end, in a way so that the students are under full supervision.
When the students are correctly weighted, then procede with surface swimming and with dives in the deep end.
Carry out exercises such as: Putting on and taking off weightbelts, putting on and taking off basic equipment on the surface, treading water, rolls, possibly diving after things.
Explain about the vest, how it is cleaned and dried, how the CO_2 cartridge is released, the dangers of CO_2, be careful breathing in.

IDEAS:
If it is possible, then get others in the club to loan their gear, so the students who have not yet bought their own can try outdoor equipment. During the explanation of how the equipment is put on, an assistant instructor can demonstrate by putting on the equipment, so the students can both see and hear how it is done. It is easy for the students to make their own buoy, and it is a good activity on a club evening.

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1P9

LIFE-SAVING WITH EQUIPMENT.

TIME: 60 min.

PURPOSE: To teach, under safe conditions, how the life vest and suit are used in an emergency situation in open water, if it becomes necessary to save a co-diver.

TOPICS: Putting on equipment and precautions before entering the water.
Rescuing a tired snorkel-diver.
Rescuing an unconscious snorkel-diver.
How and when to drop the weight-belt.
How to inflate the vest.
The importance of free air ways.
Possibly these two rescue methods can also be run through for a tired/unconscious swimmer.
Signals: Surface danger signal.

REMARKS: Divide into buddy pairings, and take turns rescuing each other.
When rescuing somebody, it is **very important** that the rescuer does not drown himself. It is therefore better to secure the distressed person on the surface, so he does not drown, than to begin taking him to shore if the rescuer is out of breath and tired. Give the danger signal and stay with the distressed person until help arrives.

REMEMBER: **If in doubt as to whether the weightbelt should be discarded, discard it.**

IDEAS: Be careful with the weights in a swimming pool. Choose a belt that has bags of lead shot in it, they do not ruin the tiles.
Try possibly practising a rescue situation in the pool, where there is a dive leader and a standby diver, just like in the open water.
Bring the standby diver into action when the danger nal is given. Everyone will be able to see how diving in open water is organised, so it will not be completely unfamiliar the first time they go out.

CMAS ☆☆ SNORKEL DIVING TRAINING THEORY

TABLE OF CONTENTS:

CMAS ☆☆ SNORKEL DIVER

2T1

INTRODUCTION TO CMAS TRAINING.

TIME: 45 min.

PURPOSE: To introduce students to the training programme and its place in the certificate system. Introduction to the national federation and CMAS.

TOPICS:
Presentation of instructors and students.
Introduction to the national association and CMAS.
CMAS snorkel diving certificate.
Review of course outline. Theoretical and practical lessons.
Review of gear to buy or bring along.
Introduction to the logbook. Purpose and use of the logbook.
Introduction to open water diving conditions.

REMARKS: The individual lesson segments should be short, in order to keep the attention of the students.
Take the gear with you and show it during the relevant lesson segment.

IDEAS: It can be a good idea to show slides or a short film on how training is handled. If possible, ask somebody from the diving club to take slides or videotape a dive, so that new students can see how what it is like.

CMAS ☆☆ SNORKEL DIVER

2T2

INTRODUCTION TO SNORKEL DIVING GEAR.

TIME: 45 min.

PURPOSE: To guide students in buying and using snorkel diving gear.

TOPICS: The construction and principles of wet suits, life jackets, various types of weight belts - particularly release mechanisms.
The knife and how to use it.
Surface buoys.

REMARKS: Explain how to clean and maintain the various parts of the gear.
Explain how to adjust the weight belt and how to work the release mechanism, as well as how to handle buoyancy in open water.
Explain how a wet suit works and how to protect against the cold. Divers shall always change clothes after a dive, as they will get chilled in a wet suit, even on a hot summer day (the evaporation takes heat from the body).

IDEAS: You should bring gear with you for this lesson, preferably many different types, so that students can see what is available.

CMAS ☆☆ SNORKEL DIVER

2T3

SIGNALS.

TIME: 30 min.

PURPOSE: To teach students the basic signals used in snorkel diving.

TOPICS: The appearance and meaning of signal flag A.

Underwater signals:
- OK.
- UP.
- DOWN.
- SOMETHING IS WRONG.
- I CAN'T EQUALISE PRESSURE.

Surface signals:
- OK.
- OK, but please come and get me.
- DISTRESS.

REMARKS: Review how the signals are used, as well as the importance of responding to the individual signals.

IDEAS: Take a diving flag with you. Remember that it has to be one metre high and 1.20 metres wide in order to comply with international regulations. Brief students on how the flag is used, and how to position it so that it can be seen by passing boats. The flag has to be fully extended (otherwise boats will be unable to see it unless the wind is blowing).
Explain and demonstrate the various signals - then practice them with your students. Show them a signal - then ask them to repeat it and tell what it means.

CMAS ☆☆ SNORKEL DIVER

2T4

SNORKEL DIVING PHYSICS 1

TIME: 45 min.

PURPOSE: To give students a basic knowledge of the physics relevant in snorkel diving.

TOPICS: Air and water pressure.
Measuring pressure.
Volume and pressure (Boyle's law).

REMARKS: It is important to use lots of examples when teaching physics.
Most people have heard that the air is thin at high elevations, meaning that the pressure is low. Conversely, most people have also tried standing in water in a pair of rubber boots. Everyone who has tried it knows that you can feel the pressure of the water.
Pressure is measured in bar.
Ear and sinus cavity squeeze should be mentioned during the lesson on volume and pressure.

IDEAS: Blow up a balloon during the next practical lesson, and demonstrate how it gets smaller at greater depths.

CMAS ☆☆ SNORKEL DIVER

2T5

SNORKEL DIVING PHYSICS 2

TIME: 45 min.

PURPOSE: To brief students on buoyancy, sound and light conditions and heat loss in the water.

TOPICS: Buoyancy.
Underwater sound conditions, including the speed of sound and the fact that it is impossible to identify the direction of sound.
Underwater light conditions, including that colours disappear and that things look larger under water.

REMARKS: Buoyancy: use examples from the swimming pool or from dives in open water. It is not necessary to refer to Archimedes' principle, as it is often very difficult to un derstand.
Sound conditions - the speed of sound under water. Use examples from the swimming pool.
Light conditions - how colours disappear at greater depths.
Light refraction - things look larger and are closer than you think.

IDEAS: It is easy to create sounds in a swimming pool to demonstrate that it is difficult to determine which direction sound is coming from.
Buoyancy can also be demonstrated in a swimming pool. Students can experiment for themselves, or you can raise something from the bottom of the pool with a lifting bag and neutralise it in the water.

CMAS ☆☆ SNORKEL DIVER

2T6

PHYSIOLOGY AND INJURIES.

TIME: 60 min.

PURPOSE: To teach students basic physiology. To brief students on the occurrence of snorkel diving injuries.

TOPICS:

Physiology:
- heart and blood circulation.
- lungs and breathing.
- max. diving depth.

Injuries:
- ear squeeze.
- eye squeeze.
- dental squeeze.
- lung squeeze.
- drowning.
- panic.
- hyperventilation.
- heat loss.

REMARKS:

Physiology:
Students should be briefed generally about principles, that is, how heart and blood circulation affects lung function. Maximum diving depth should be dealt with in the lesson on the lungs.

Injuries:
Students should be briefed on symptoms and how to relieve symptoms. Concerning heat loss, students should be told that even on a hot summer day, they can lose a dangerous amount of body heat. They need to be reminded to always remove their wet suits after a dive, to prevent condensation from the suit. Condensation requires heat, and the heat is taken from the body.

IDEAS: Heat loss can be demonstrated on a dive on a hot, sunny day. Wrap some carbonated beverages in wet towels or newspaper and lay them in the sun: they will be cold after a few hours.

CMAS ☆☆ SNORKEL DIVER

2T7

FIRST AID AND RESUSCITATION.

TIME: About 45 min. of instruction, followed by 2-3 hours of practice.

PURPOSE: To brief students on how to give first aid and artificial ventilation, to the extent that after the lesson, students are able to perform artificial ventilation using the mouth- to-mouth method, and to offer appropriate first aid.

TOPICS: How to avoid accidents. The safety measures to be followed for snorkel diving.

Saving yourself:
- inflating life jacket.
- dropping weight belt.
- removing mask from face in order to get air.
- danger signal.
- heading for the buoy to get extra buoyancy.

Saving your buddy:
- inflating life jacket.
- dropping your buddy's weight belt.
- removing mask from face.
- danger signal.
- rescuing your buddy.

First aid:
- Artificial ventilation using mouth-to-mouth method.

REMARKS: Use a dummy (model Anne) to practice artificial respiration. It is not necessary for students to have a deeper understanding of resuscitation, but all students should practice artificial ventilation on a dummy.
Students can practice the correct position for giving artificial ventilation by taking turns being "victim" and "rescuer".

Emphasis should be on practice drills.

IDEAS: If possible, you could ask an emergency rescue service if they would be willing to demonstrate some of their equipment.

CMAS ☆☆ SNORKEL DIVER

2T8

SAFE DIVING, SAFETY EQUIPMENT AND STATUTORY REGULATIONS.

TIME: 45 min.

PURPOSE: To brief students about the safety measures that must be respected in conjunction with snorkel diving in open water. To brief students about basic statutory regulations.

TOPICS:
Dive marshall and his/her role.
Respecting the diving plan.
Avoiding sites with current and waves.
Dangerous plants and animals.
Life jackets.
Surface buoys.
Using the boat.
Fishing regulations, including sites where fishing is not allowed. Fishing licenses are also needed for underwater fishing.
Weapon regulations, use of hand spears and harpoons.
National legislation concerning archaeological finds, for example.

REMARKS: The dive marshall handbook contains several illustrations and sections that can be used in the talk about safe diving.

IDEAS: Slides and videotapes are ideal for this lesson. For example, have shots of a coast with onshore wind and one with offshore wind. If possible, have pictures of buoys and other objects that indicate the presence of a current.

CMAS ☆☆ SNORKEL DIVER

2T9

THEORY TEST.

TIME: 45 min.

PURPOSE: To test whether the student's knowledge of the theory and practice of snorkel diving meets CMAS requirements.

TOPICS: Oral theory test or examination

Suggested test topics:

- Equipment, its maintenance and use.
- Sound and light conditions underwater.
- Heart and lung function.
- Snorkel diving injuries.
- Resuscitation.
- Signals above and under water.

REMARKS: Depending on the age of the students, an oral test can be given to each student alone, or a general examination can be made of the whole class, with each student asked one or more questions.

IDEAS:

CMAS ☆☆ SNORKEL DIVING TRAINING PRACTICE

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CMAS ☆☆ SNORKEL DIVER

2P1

INTRODUCTION TO SNORKEL DIVING IN OPEN WATER.

PURPOSE: To teach students how to snorkel dive from shore. To teach students the most general differences between diving in open water and in a swimming pool. To make sure that students are weighted correctly.

LESSONS: Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Briefing on the purpose of the dive, including how to manage buoyancy.
Buoyancy in shallow water.

Drill in snorkel diving skills:

- Surface swimming
- Diving deep enough to fill the snorkel
- Clearing the snorkel.
- Treading water.

REMARKS: The diving site must be well-protected open water free from current.
Depth: max. two metres. At this depth, everyone will be able to see something, even if they do not get under, or barely get under, the surface.
Remember to use the buddy system. Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.

IDEAS: Try to involve all students in the various tasks connected with diving. For example: observation of the diving area, keeping a logbook, helping other divers into and out of the water.

CMAS ☆☆ SNORKEL DIVER

2P2

SHORE DIVING 1

PURPOSE: To teach students how some of the skills learned in the swimming pool can be used in open water. Practice mask clearing and correct diving. The dive is planned as a recreational dive with built-in drills.

LESSONS: 50-metre surface swim with fins and buoy along the coast.
Diving head first.
Surfacing (reminding students to rotate with hand held above head).
Methods for coming ashore safely and easily.

REMARKS: The diving site must be safe and free from current, max. 1.5-2 metres deep.
REMINDER TO STUDENTS: *Never* take more than a few breaths for a dive. If you breathe too rapidly (hyperventilation), you could faint without warning.

IDEAS: It is common for students to act nervously on their first few dives in open water. It is a good idea to ask them to dive for small stones or similar objects. Completing a task successfully makes them feel more sure of themselves and their "stage fright" disappears.

CMAS ☆☆ SNORKEL DIVER

2P3

SHORE DIVING 2

PURPOSE: To practice several techniques learned previously in open water. The dive is planned as a recreational dive with built-in practice drills.

LESSONS: Briefing on the objective of the dive.
Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Diving feet first.
Inflating life jacket.
Emptying mask underwater.

REMARKS: The diving area must be well-protected open water free from current.
Depth: max. 2-3 metres.
Remember to use the buddy system. Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.
Before the dive starts, show various types of life jackets. Students should practice diving feet first while treading water, just like in a swimming pool.
Life jackets should be inflated by mouth on the surface. Students should try to turn upside down as well as to float while wearing life jackets, in order to familiarise themselves with how they work in open water and what they can be used for. Another option is to use a rubber dinghy to pick up the students, which will allow them to become familiar with the procedure in case of a sudden emergency.
Masks can be emptied by buddies in turn, or the instructor can dive with the students and demonstrate the drill.
Note: The mask should simply be lifted away from the face so that it fills with water.

IDEAS: Let students test their life jacket with various strap lengths. The idea is for them to see that if the straps are too loose, the life jacket can actually fall off, and if the straps are too tight, it inhibits mobility in the water. Explain the importance of correct strap length.

CMAS ☆☆ SNORKEL DIVER

2P4

SHORE DIVING 3

PURPOSE: To practice endurance in surface swimming and repeated diving. To demonstrate how snorkel diving is usually done once divers have completed the course.

LESSONS: Briefing on how diving is done, including the fact that snorkel diving is usually a combination of surface swimming and diving.
Surface swimming, about 200 meteres with a number of dives to a depth of about two metres. Explain that students will gradually be exposed to greater water depths.

REMARKS: The diving site must be well-protected open water free from current.
Depth: max. 2.5-3.5 metres.
Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.
Practice the large "surface OK" signal, as well as the signal for "OK but please come and get me". One option is to mark off the diving area into corners, so that the students will have fixed points to swim to.
Students should be debriefed as soon as the diving is over. That is, all divers should have the opportunity to say how the diving went, for example, whether they enjoyed it, which fish they saw, whether anything frightened them, etc.

Debriefing is important. It gives students an opportunity to talk about their diving experiences, and gives instructors a chance to learn whether a diver was nervous about anything, in time to rectify misunderstandings or gaps in information.

IDEAS: One option is to drop objects for students to find. This is a particularly good idea if the bottom of the diving area is boring.

CMAS ☆☆ SNORKEL DIVER

2P5

RETRIEVING OBJECTS 1

PURPOSE: For students to practice their skills in staying under water long enough to retrieve small objects.

LESSONS: Diving after small objects at or near marker buoys.
Diving head first.
Surfacing (reminding students to rotate with hand held above head).

REMARKS: The diving site must be well-protected open water free from current, 2.5-3.5 metres deep.
Buoys can be set out in water that is three metres deep. Attach an anchor to each buoy, heavy enough to pull the line taut.
Note: Be very careful not to leave any free line floating in the water. Line should be taut so that no one can get caught in it. Do not leave any extra line either, as this increases the danger of someone getting caught in the line.

IDEAS: It is usually fun to dive for objects, and many different things can be set out for retrieval. One option is to tie objects to a stone or other heavy support, so that they have to be freed with a knife.

CMAS ☆☆ SNORKEL DIVER

2P6

RESCUE TECHNIQUES IN OPEN WATER AND RESUSCITATION.

PURPOSE: To teach students how to rescue an unconscious or tired person by one and two divers, respectively. Drill in how to signal others for help.

LESSONS: Briefing on the object of the dive, including which rescue techniques work best.
Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Rescue of a tired swimmer, 25-50 metres.
Rescue of an unconscious person, 25-50 metres.
(both drills carried out alone and in teams) (buddies).
Inflating own and "victim's" life jacket.
Removing weight belt.
Giving the distress signal.
Resuscitating the "victim" once he or she is brought to shore.

REMARKS: The diving site must be well-protected open water free from current, 2.5-3.0 metres deep.
Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.
When both divers are ready, they take turns playing the parts of victim and rescuer. The rescuer removes the victim's weight belt and inflates his or her life jacket, gives the distress signal and then swims with the victim towards a boat or shore. The standby diver joins in and helps with the rescue.
The same procedure is used to help rescue a tired swimmer, except that the eight belt is not removed.
Tie an extra buoy to the victim's weight belt before dropping it, so that it can be located again easily.
Let students explain and demonstrate resuscitation.
Each team (buddies) should be debriefed after the drill. They should first be allowed to share their experience, and then the diving instructor can offer good advice about how to tackle emergency situations.

IDEAS: Think up tasks for the divers while they are on land during the drill. For example, some of the students can be observers who report when an "emergency situation" arises. If it is possible to sail "victims" into shore, there could also be a group to offer first aid and to carry "victims" from the boat to shore.
Post a sign on the beach explaining that your diving club is holding a rescue drill, so that spectators will not attempt to help with the rescue.

CMAS ☆☆ SNORKEL DIVER

2P7

RETRIEVING OBJECTS 2

PURPOSE: To give students an idea of how they can raise larger objects by helping each other and by using small lifting bags.

LESSONS: 200-metre surface swimming on the back.
Diving head first to depths of 3-3.5 metres.
Tying a small lifting bag such as a plastic shopping bag to an object.
Using the snorkel to blow air into the bag.
Raising the object and "swimming" it to shore.
Retrieving smaller objects, with each student or team (buddies) creating the necessary buoyancy.

REMARKS: The diving site must be safe and free of current, max. three metres deep.
The instructor or someone designated by the instructor ties a lifting bag to an object in about three metres of water. The object should weigh 10-15 kg.
Students raise the object by blowing air from their snorkels into the bottom of the lifting bag until the object is raised.
With smaller objects, students can try to swim with the object under water and can also try to lift it above water. This gives a clear idea of how raised objects should be transported.

REMINDER TO STUDENTS: *Never* take more than a few breaths for a dive. If you breathe too rapidly (hyperventilation), you could faint without warning.

IDEAS:

CMAS ☆☆☆ SNORKEL DIVING TRAINING THEORY

TABLE OF CONTENTS:

CMAS ☆☆☆ SNORKEL DIVER

3T1

INTRODUCTION TO CMAS THREESTAR SNORKEL DIVING TRAINING.

TIME: 45 min.

PURPOSE: To introduce students to the training programme and its place in the certificate system. Introduction to the national federation and CMAS. Briefing on training options such as CMAS snorkel diving instructor.

TOPICS:
Presentation of instructors and students.
Introduction to the national federation and CMAS.
CMAS three-star snorkel diving certificate and the reason for it.
Training options such as CMAS snorkel diving instructor.
Review of course outline. Theoretical and practical lessons.
Review of gear to buy or bring along.
Introduction to open water diving conditions.

REMARKS: The individual lesson segments should be short, in order to keep the attention of the students.

IDEAS: It can be a good idea to show slides or a short film on how training is handled. If possible, ask a diving club to take slides or videotape a dive, so that new students can see how some of the lessons are taught.

CMAS ☆☆☆ SNORKEL DIVER

3T2

PHYSICS FOR SNORKEL DIVERS.

TIME: 45 min.

PURPOSE: To teach students the basic physical laws relevant to snorkel diving.

TOPICS: Air and water pressure.
Boyle's law.
Archimedes' principle (buoyancy).
Sound and light conditions.

REMARKS: Air and water pressure are reviewed on the CMAS two-star snorkel diving course, so this topic should be practiced.
Boyle's law: the law should be explained and illustrated by simple calculations.
Archimedes' principle: the principle should be explained and illustrated by simple calculations.
Sound and light conditions are reviewed on the CMAS two-star snorkel diving course.

IDEAS: It is important to use examples that are known from dives, so that students can see that the principles work and are useful in practice.

CMAS ☆☆☆ SNORKEL DIVER

3T3

ANATOMY AND PHYSIOLOGY.

TIME: 45 min.

PURPOSE: To teach students how the human body works in general.
To teach students how the heart and lungs work.

TOPICS: The skull and major sinus cavities, plus the Eustachian tube.
Blood composition.
Breathing and air composition.
Heart and blood circulation.
Lungs.
The significance of hyperventilation.
Dead space and its significance.

REMARKS: Start with anatomy. What is most important in this context is the skull with its many cavities, all of which are relevant if you dive when you have a cold. Review the composition of blood briefly. Mention the most important components of the blood and their function.
Stress hyperventilation and attendant dangers.
Under the topic *dead space*, you can make simple calculations showing maximum diving depth. In particular, remember that dead space can be so great that the diver inhales his own exhaled breath. Warn against long snorkels and snorkels that lead into the mask.

IDEAS: A good way to illustrate the heart to students is to buy a pig's heart in the supermarket, for example. If you dissect it carefully, you can see all the chambers.

CMAS ☆☆☆ SNORKEL DIVER	SNORKEL DIVER ACTIVITIES.
3T4	

TIME: 45 min.

PURPOSE: To brief students on the various activities that exist for snorkel divers.

TOPICS:
Fin swimming.
UV rugby.
UV spearfishing.
Archaeology.
Environment.
The National federation youth committee.

REMARKS: Cover each lesson topic, for example, review the regulations briefly. Photography, archaeology, and the environment are obvious interest areas for snorkel divers. For example, many stone-age dwelling sites lie in very shallow water. It is also very easy to get involved in environmental issues, as it is easy to learn to recognize and register fish and plants, just as pollution is easy to detect in shallow water.

IDEAS: This lesson can be easily combined with a club evening, with the assistance of "professional" support from club members interested in some of the various areas. Alternatively, a meeting could be arranged with someone from outside the club, for example, from one of the national federation committees.

CMAS ☆☆☆ SNORKEL DIVER

3T5

SNORKEL DIVING INJURIES.

TIME: 45 min.

PURPOSE: To give students a more thorough knowledge of injuries and how to prevent and relieve them.

TOPICS:
Exhaustion.
Panic.
Drowning.
Squeezes - ear, dental, sinus, eye, lung.
Oxygen deficiency.
Heat loss (hypothermia).

REMARKS: Review the symptoms and treatment of each topic, as well as how to prevent injuries.
Exhaustion often leads to panic and thus the risk of drowning. Warn students against staying in the water until they get cold and thus exhausted.

IDEAS: Your Water Sport Safety Council or similar organization will have many different brochures about water sport risks. The brochures are usually free and will make an excellent supplement to this lesson.

CMAS ☆☆☆ SNORKEL DIVER

3T6

PLANNING AND ORGANISING SNORKEL DIVING FROM A BEACH.

TIME: 60 min.

PURPOSE: To help students understand how to organize and carry out a dive safely from a beach.

TOPICS:

The expedition leader's tasks:

- to set participant requirements.
- to decide on the site.
- to ensure that common gear is brought along for the dive.
- to assess wind and weather together with the dive marshall.
- to delegate tasks before, during and after the dive.

The dive marshall's tasks:

- to put together the teams.
- to evaluate the diving site, as well as wind and weather.
- to brief everyone on how the dive will be carried out, as well as on safety measures such as stand-by divers and boat driver.
- to carry out the dive.
- to make sure that the various teams are ready on time.
- to debrief all divers together, after the dive is finished.
- to delegate tasks during the dive.

The participants' tasks:

- to follow the instructions of the expedition leader and dive marshall.
- to be ready on time.
- to bring personal gear.
- to take part in observing the diving area when on land.
- to tell the expedition leader or dive marshall if they leave the diving site before everyone is finished.
- to help with preparation and clean-up.

REMARKS: Brief students on wind and current conditions at the diving site. Explain how the dive marshall can help, where stand-by divers should be positioned and what their function is. Once they finish the training course, students are expected to participate actively in carrying out a dive, and serve as expedition leader on a dive. Students are expected to be able to assist the dive marshall and give instructions to their fellow divers.

IDEAS: After the lesson, arrange for students on the course to be delegated tasks in conjunction with the next regular dive carried out by your diving club. For example, students could act as assistant expedition leader and assistant dive marshall.

CMAS ☆☆☆ SNORKEL DIVER

3T7

SPECIAL DIVING GEAR.

TIME: 45 min.

PURPOSE: To teach students about the use of special diving gear, including equipment that is not used very often. New equipment should also be incorporated into this lesson.

TOPICS: Compass use.
Depth measurement.
Spears - elastic, feather and air-pressure.
Snorkels - the many new types with valves.
Repairing wet suits.

REMARKS: Compass use can be demonstrated by holding a short orientation race for students.
Explain and show the most common types of spear. Remember to show how they work and to review safety regulations.
Demonstrate how to repair neoprene.

IDEAS: The orientation race can be held like a traditional race with checkpoints, or it can be organized like this:
Set out markers about 50 metres apart on a field such as a sports field. The markers can be in the shape of a triangle or square, for example. Allow participants to walk through the course, taking notes underway on compass directions and number of steps between markers. Then, blind participants with a bag or scarf so that they can only see the compass, which they hold close to their chests. **Remember: if you blind participants with a bag, give them a snorkel stuck through a hole in the bag.**
Once participants are blinded, they try to follow the course, and whoever comes closest to the goal wins, naturally. This type of orientation race corresponds very well to diving in open water with limited visibility.

CMAS ☆☆☆ SNORKEL DIVER

3T8

PLANNING AND ORGANISING
SNORKEL DIVING FROM A BOAT.

TIME: 45 min.

PURPOSE: To teach students about the safety measures involved in diving from a boat, including the tasks of the expedition leader and dive marshall.

TOPICS:
Expedition leader and his/her role.
Dive marshall and his/her role.
Planning a dive.
Putting a team together.
Observing the dive site.
Using small boats.
What to do in case of accidents and how to call for help.

REMARKS: The handbook for dive marshall contains several illustrations and sections that can be used to explain about safe diving, dives and the tasks of the dive marshall.
Explain the influence of the current on the lie of the boat once the anchor has been thrown.
Explain the importance of always diving ahead of the boat, so that a tired diver will always be carried towards the boat.
Once they finish the training course, students are expected to know enough about diving from a boat to assist the expedition leader and dive marshall.

IDEAS: Slides and videotapes are ideal for this lesson. For example, have shots of a coast with onshore wind and one with offshore wind. If possible, have pictures of buoys and other objects that indicate the presence of a current.

CMAS ☆☆☆ SNORKEL DIVER

3T9

FIRST AID AND RESUSCITATION.

TIME: About 45 min. of instruction, followed by 2-3 hours of drill.

PURPOSE: To brief students on first aid techniques and resuscitation, to the extent that after the lesson, students are able to perform artificial respiration and to know enough about first aid to react correctly in an emergency.

TOPICS: How to avoid accidents. The safety measures to be followed for snorkel diving.

Saving yourself:
- inflating life jacket.
- dropping weight belt.
- removing mask from face in order to get air.
- danger signal.
- heading for the buoy to get extra buoyancy.

Saving your buddy:
- inflating life jacket.
- dropping your buddy's weight belt.
- removing mask from face.
- danger signal.
- rescuing your buddy.

First aid:
- Calling for help.
- Artificial ventilation using mouth-to-mouth method.
- Resuscitation with oxygen equipment.

REMARKS: Use a dummy (model Anne) to practice artificial ventilation. It is not necessary for students to have a deeper understanding of resuscitation, but all students must be able to perform artificial respiration correctly.
Students can practice the correct position for giving artificial ventilation by taking turns being "victim" and "rescuer".
Emphasis should be on practice drills.

IDEAS: If possible, you could ask an emergency rescue service if they would be willing to demonstrate some of their equipment.

CMAS ☆☆☆ SNORKEL DIVER	THEORY TEST.
3T10	

TIME: 45 min.

PURPOSE: To test whether students have the necessary knowledge of the theory behind snorkel diving in open water.

TOPICS: Oral theory test or examination. An oral test can be given to each student alone, or a general examination can be made of the whole class, with each student asked one or more questions.

REMARKS: It is important to determine whether students have the requisite knowledge, because once they have earned their CMAS three-star snorkel diving certificate, they have the option of taking the instructor training course.

IDEAS:

CMAS ☆☆☆ SNORKEL DIVING TRAINING PRACTICE

TABLE OF CONTENTS:

CMAS ☆☆☆ SNORKEL DIVER

3P1

SHORE DIVING 1

PURPOSE: To teach the student the necessary precautions for shore diving at greater depths. To practice endurance in surface swimming. To practice the use of the compass.

LESSONS: Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Briefing on the purpose of the dive, including how to use a compass.
Setting out buoys.
Checking gear.
400-metre surface swimming with buddy towards the buoy.
Diving to depths of 5-6 metres during the swim. Using the compass to stay on course.

REMARKS: The diving site must be reasonably well-protected open water free from cur rent.
Depth: max. 5-6 metres.
For example, divers could swim at 45° along the coast.
A rubber dingy or similar should be standing by.
Remember to use the buddy system. Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.

IDEAS: Let students act as assistant expedition leader and dive marshall. Students can take turns as dive marshall and log keeper, but they must be supervised by the instructor, so that there is no risk to diving safety.

CMAS ☆☆☆ SNORKEL DIVER

3P2

BOAT DIVING 1

PURPOSE: To teach the student how to snorkel dive from a boat. To practice the use of a compass.

LESSONS: Storing gear in the boat.
Briefing on the purpose of the dive. Warning that there could be a current.
Taking the precaution of diving in front of the boat, so that a tired diver will be carried towards the boat.
Getting into the water from the boat.
Diving in 5-6 metres of water.
Practice in using a compass.

REMARKS: Remember that once the boat is anchored, it will lie with the current. This means that if divers dive ahead of the boat, they will not have to swim against the current to get back to the boat.

Note: Attach a large buoy to the anchor line, so that the anchor can be left if the boat has to be used to pick up a diver who is tired or in distress.

IDEAS: Find a good diving site, for example, with rocks or a reef. Visibility is often better on a reef than on a flat, sandy bottom, and a reef also provides a better opportunity to see different types of fish and vegetation.

CMAS ☆☆☆ SNORKEL DIVER

3P3

RETRIEVING OBJECTS.

PURPOSE: To teach the student retrieval techniques and to practice retrieving large and small objects from the bottom.

LESSONS: Briefing on the purpose of the dive.
Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Retrieving small objects.
Raising large objects with lifting bags.

- students attach a lifting bag to an object in 4-6 metres of water. The object should weigh 10-20 kg.
- after the bag is firmly attached, the students dive down to the bag and use their snorkels to fill it with air.
- the bag and the object are transported on the surface towards land, preferably so close that the object can be brought ashore.

REMARKS: The diving site must be well-protected open water free from current.
Remember to use the buddy system. Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.
In advance, make sure to have a lifting bag that can be attached easily and securely. For example, use a bag with rings attached to the open end, and pull a rope with a spliced eye on one end and a snap hook on the other through the rings. The snap hook can be pulled easily through the object to be raised and snapped onto the other end of the rope.

IDEAS: Ask students to make a couple of lifting bags before the dive. This gives them experience in splicing rope, among other things. Bags can be made of heavy-duty plastic or canvas.

CMAS ☆☆☆ SNORKEL DIVER

3P4

EMERGENCY PROCEDURE.

PURPOSE: To teach students what to do in an emergency that arises in the water.

LESSONS: Briefing on carrying out the dive.
The dive marshall's tasks.
The boat driver's tasks.
The standby diver's tasks.
The buddy's tasks.
Students take turns "playing" the various roles.

REMARKS: The diving site must be well-protected open water free from current.
Depth: max. 5 metres.
Divide students into two-man teams (the buddy system).
Each diver must carry a surface buoy and life jacket.

The instructor assigns some of the divers the task of simulating certain types of emergency situations, such as unconscious diver, tired swimmer, diver in panic. The other divers act as rescuers.
The diving site is 100-200 metres from shore. When the "emergency" arises, the buddy goes to the aid of the "victim", and signals for help. When help arrives, the rescuers assist each other in bringing the "victim" to shore.
Participants should be debriefed at the site, so that everyone understands the correct emergency procedure.

IDEAS: "Missing diver" rescue can be simulated using a plastic bag partially filled with sand and thrown overboard from a dingy a couple hundred metres from shore. The students on the shore point out the position, and organize and implement the search and rescue.

CMAS ☆☆☆ SNORKEL DIVER	NAVIGATION AND SEARCH TECHNIQUES.
3P5	

PURPOSE: To teach students how to navigate and how to carry out a search.

LESSONS:
Briefing on the purpose of the dive.
Navigating by compass and landmarks.
Searching for objects.
Three methods can be used.
Circle search.
Compass search.
Lane search.

REMARKS:
The diving site must be well-protected open water free from current.
Depth: max. 2.5 metres, otherwise students will not be able to stay down very long.
Explain that an object has been lost, and that the person who lost the object marked it by landfall.
Drop an anchor with a buoy to mark the landfall.
Search using one or more methods.

IDEAS: Diving to find lost objects can be fun. One option might be searching for a boat motor or "person" (sandbag) who has fallen overboard.

CMAS ☆☆☆ SNORKEL DIVER

3P6

NIGHT DIVING.

PURPOSE: To teach students how to orient themselves when diving at night or in water with very limited visibility. Also, to check the ability of students to handle situations that arise under conditions with limited visibility.

LESSONS: Briefing on the purpose of the dive.
Short briefing on what marine life to expect.
Briefing on safety measures, including stand-by divers, dive marshall and putting together a diving team.
Briefing on the importance of illuminating the surface buoy.
Review of night signals.
Snorkel diving in 2-3 metres of water, using a light and a compass.
The light is switched off for about five minutes.

REMARKS: The diving site must be well-protected open water free from current.
Depth: max. 3 metres.
Divide students into two-man teams (buddies).
Each diver must carry a surface buoy and life jacket.

It is possible to see quite a bit after the light has been switched off for a few minutes.
Remember never to shine light directly into people's faces, because it ruins their night vision for quite some time.
Only a few teams should dive at a time.
Chemical lights or bicycle lights can be used to illuminate buoys.
Everyone involved in night diving should be quiet, so that a call for help from the water is not drowned out by talking on shore.

IDEAS: All divers on shore can act as observers, scanning the water for possible dangers.

CMAS ☆☆☆ SNORKEL DIVER

3P7

SHORE DIVING 2,
LEADING A GROUP OF SNORKEL DIVERS.

PURPOSE: To check whether students can lead a group of snorkel divers in open water in a safe and convincing manner. To practice the techniques already learned, as well as endurance.

LESSONS: Briefing on how the dive will be carried out, including the information that students are the main focus.
The choice of diving site is made in advance, on the basis of the weather forecast as well as the wind and weather at the time. Participants must agree on the choice.
Participants take turns acting as dive marshall for each other two by two. In other words, dive marshalls work in pairs, taking turns acting as dive marshall and log keeper. The students decide the following:

- team composition.
- number of teams in the water and how the dive is carried out.
- debriefing.

REMARKS: Have several different tasks in mind, so that the dives are not identical for all dive marshalls.
Suggestions:

- 300-metre surface swim with diving.
- search.
- shore diving.
- retrieving objects.

IDEAS: When participants are acting as dive marshall, try to get them to understand how vital it is to always be one step ahead of the divers. It is the job of the dive marshall to make decisions and set guidelines. The dive marshall is not doing his job if the divers start making the decisions.

CMAS ☆☆☆ SNORKEL DIVER

3P8

BOAT DIVING 2

PURPOSE: To check whether students can apply the knowledge they learned from the lesson on diving from a boat.

LESSONS: Practice saving your buddy by diving from the boat.
Surface swim with dives down to about six metres.
Diving down to and rescuing your buddy from a depth of about six metres.
Surface security and sending a distress signal.
Bringing your buddy back to the boat; removing your buddy's weight belt.
Getting your buddy on board the boat.

REMARKS: The diving site must reasonably free from current.
Depth: max. 6-7 metres.
Check to ensure that students have the necessary composure and overview of the situation, also in open water where there can be a slight current.

IDEAS: