

Ocean Diver

Being underwater

Module objectives

The main objective of the first practical module is to make students comfortable both in and under the water, and to introduce some basic skills. This is not something to be rushed, as that will only result in slower progress in later modules. The more these basic skills become second nature; the easier students will find it to learn more complex skills in subsequent modules.

Achievement targets

At the end of this module students should:

- Be able to correctly fit and use a face mask
- Be able to correctly fit, use and clear (by exhaling) a snorkel
- Have started to develop a good finning action
- Be comfortable breathing from a demand valve underwater
- Have begun to develop buoyancy control skills
- Have achieved a horizontal trim position underwater
- Know the signals for 'OK', 'stop', 'up', 'down', 'you watch me' and 'you do'
- Have dismantled and washed a scuba unit, under supervision

Equipment needed

The instructor and each student will need:

- Basic equipment (mask, fins and snorkel)
- A scuba set comprising a single cylinder, buoyancy compensator (BC) (ensure that a student's BC is a good fit) and regulator fitted with an alternative supply (AS) configured to comfortably provide an effective gas supply to an out-of-gas recipient
- Weight belt and weights if necessary
- Pool suit or shorty wetsuit and boots (optional appropriate to conditions)

Note: as students will, understandably, be keen to get diving, for this first module the scuba equipment should be prepared by the instructor before the lesson and placed where it will be accessible from shallow water.

- Initial training is best completed with simple, standard equipment, so it is best practice to avoid the use of specialised or unusual equipment for Ocean Diver modules if possible.

Module contents

This module teaches students how to use basic equipment (mask/fins/snorkel) and introduces scuba, including breathing underwater, achieving neutral buoyancy, and the use of dive signals. Students are shown how to care for their scuba kit after use.

All practical Ocean Diver modules can either be delivered as a single session or broken down into two or more separate sessions, depending on students' progress and the time available.

The following sections are intended as a guide on how to deliver the skills. The sequence can be varied to suit local conditions and the needs of individual students. However, each session should begin with a briefing and a buddy check, and end with a debrief.

Using the principle of teaching by demonstrating a practical skill and then asking students to do it (demo/do), you will demonstrate each element of a skill first before asking students to copy your demo. Correct any errors by repeating the demo-do sequence emphasising the correct action.



1. SEEDS brief

Cover all elements of a SEEDS brief in a logical sequence appropriate to the local conditions. Reassure students that less haste at this point in training will mean more speed overall.

- **Safety**

As this is your students' first encounter with water pressure, you need to stress the importance of ear clearing, mask equalisation and that they breathe normally at all times when using scuba, taking particular care on ascent. Also point out any relevant hazards of the venue.

- **Equipment**

List the equipment required for the lesson: basic equipment, scuba unit and weight belt. (As this is the first sheltered-water module, you need to make sure that students know what they need to bring, well before the lesson, and you need to make sure that all other equipment needed will be available.)



- **Exercise**

Very briefly outline the main elements of the lesson, following the lesson objectives: use of basic and scuba equipment, breathing underwater and an introduction to buoyancy control and the use of signals. Do not talk through each skill in detail, this will be done by demonstrating in the water.

- **Discipline**

Ensure that students understand the importance of watching each of your demonstrations and only attempting to repeat a skill when prompted by you.

- **Signals**

Demonstrate the basic diving signals: 'OK', 'stop', 'up', 'down'. Ensure all students understand these and can repeat them. Introduce any teaching signals such as 'you watch me' and 'you do'.



2. Fit and use mask, fins and snorkel – in standing depth

This exercise introduces students to basic equipment and builds confidence in its use before introducing scuba.

- **Enter into shallow water, without equipment**
 - Lead students into waist-deep water.
 - If a ladder is used, demonstrate three-point contact method (move only one hand or foot at any one time on the ladder, maintaining contact with the other three) in preparation for later entries wearing scuba kit.
- **Demist mask**
 - With saliva or defogging agent and rinse with water.
- **Fit mask**
 - Position mask on face and ensure correct seal with no trapped hair.
 - Secure mask to face using strap, which should be just tight enough to hold the mask in position.
- **Secure snorkel**
 - Slip snorkel under mask strap or use the snorkel-retaining clip.
 - Position it to give comfortable alignment.
 - As most regulators come over the right shoulder it's preferable for snorkels to be fitted on the left to avoid snagging.



- **Breathe through snorkel, face submerged, static**
 - Establish breathing rhythm in standing depth, ensure that the students have adequate time on the surface for their breathing to settle.
 - Submerge face by crouching down, check mask for leaks.
 - Continue breathing through snorkel until comfortable breathing rhythm is established.

- **Flood/clear snorkel by exhaling, static**
 - Crouch down to submerge face, breathe normally.
 - After taking a breath, submerge head further until snorkel floods.
 - Rise until surface is level with top of mask.
 - Forcibly exhale to expel water and continue breathing through snorkel.
 - Repeat cycle several times.
- **Fit fins**
 - Lean against buddy or a suitable fixed object for support.
 - Make a figure 4 with legs and fit fins.
 - Move around by shuffling backwards once fins fitted.
- **Practise finning on back**
 - Develop action from hips with legs flexing only slightly at the knee and ankle.
 - Ensure long and gentle fin strokes.
 - Build-up distance travelled over several repetitions.

Note: Correcting poor finning technique at this stage is easier than trying to correct it once the poor technique has become more ingrained, but do not labour this to the point where progress is held up. Later exercises in this, and subsequent lessons, provide the opportunity to further develop students' finning action.

- **Practise finning on front**
 - Breathing through snorkel, aim to maintain the same finning action.
 - Ensure that movement comes from the hip (not the knee), and that the knees only bend slightly on the upward stroke and straighten on the downward stroke.
 - Avoid an ineffective cycling action with excessive knee bending.
 - Build-up distance travelled over several repetitions.



- **Flood/clear snorkel, face submerged, while finning**
 - While finning, inhale, remove snorkel from mouth to flood mouthpiece.
 - Refit mouthpiece and clear by exhaling.
 - Repeat several times.
- **Remove fins**
 - Lean against buddy or a suitable fixed object for support.
 - Make a figure 4 with legs and remove fins.
- **If needed, exit water**
 - Leave the water by wading out.
 - Or if using a ladder, demonstrate climbing the ladder using the principle of three-point contact
 - Return to the water and ask each student in turn to climb the ladder and wait beside it, positioned a safe distance from the water's edge.

3. Fit and use scuba – in standing depth

To make this first experience as comfortable as possible, where the location permits, in a swimming pool for example, the kitting up and buddy check should be performed in standing depth water.

- **Fit weight belt**

Note: If a pool suit is not used it is unlikely that students will need any additional weight. However, students should be introduced to the idea that additional weight may be required and understand how to fit a weight belt.

- **Fit scuba equipment**
 - Demonstrate and then supervise buddies helping each other to kit up.
 - Care must be taken to avoid injury when lifting heavy cylinders. NB this is especially relevant if a BC with integrated weight systems are being used
- **Quick but thorough buddy check**
 - Use BAR or another appropriate acronym.
 - Remind students about ear clearing, mask equalisation, breathing normally at all times. A quick recap of the previously briefed signals would be appropriate at this time.

- **Refit mask**



- **If needed, enter into shallow water, wearing scuba kit**

- Lead the students, down a ladder or by wading, into waist-deep water.
- If a ladder is used, then demonstrate the principle of ‘three-point’ contact (moving only one hand or foot at any one time) to prevent falling from ladder while wearing heavy equipment.

- **Breathe from demand valve, standing depth**

Establish normal breathing rhythm on surface before continuing.

- Crouch down to submerge head and allow adequate time underwater for students to become comfortable breathing from the demand valve.



- **Use hand signals**

- Repeat exercise incorporating the hand signals ‘OK’, ‘stop’, ‘up’, ‘down’.

- **Fit fins, standing depth**

- Lean against buddy or a suitable fixed object for support while fitting fins (remember to make a figure 4 with legs).
- Only move around by shuffling backwards and sideways once fins fitted.

4. Buoyancy control – in standing depth

This exercise introduces control of buoyancy through a combination of correct weighting, use of the BC and breathing. It allows students to experience the feeling of increasing and decreasing the buoyancy provided by their BC, an awareness of how their breathing can affect their buoyancy, and develops familiarity with the BC controls.

- **Demonstrate BC controls, on the surface**

- Inflate BC fully using direct feed.
- Breathing from the demand valve, crouch down until supported by BC. Vent BC until the chin touches the water surface.
- Raise corrugated hose making mouthpiece highest point of BC.
- Re-inflate BC fully using direct feed.
- Repeat exercise, venting from both BC mouthpiece and pull-string dump valve.

Note: Instructors may need to adjust technique demonstrated to suit equipment used by the students.

- **Swim on back with BC inflated, on the surface**

- Use mouthpiece to inflate BC and give adequate support on surface.
- Fin on back for a minimum of 50m breathing from demand valve (extend as necessary if corrective action is required).
- Check for good finning action from the hips with slight flex at the knee and ankle.
- Explore the effect of attitude in the water: compare lying back in the water to minimise drag with sitting more upright
- Frequently look around to check direction.

Note: This exercise builds confidence in the support provided by the BC and gives an opportunity to further develop a good finning action. Explain that on the surface finning is more efficient on the back than on the front.

- **Swim on front with BC inflated, on the surface**



- Use mouthpiece to inflate BC and give adequate support on surface.
- Fin on front for a minimum of 50m breathing from demand valve (extend as necessary if corrective action is required).
- Check for good finning action originating from the hip (not the knee), and that the knees only bend slightly on the upward stroke and straighten on the downward stroke.
- Avoid ineffective cycling action with excessive knee bending.
- Build-up distance travelled over several repetitions.
- **Monitor instruments**
 - At routine intervals throughout the module, include a gas check to ensure that all students have adequate gas.
 - It is important that checking gas contents regularly becomes second nature.



- **Descend and adjust for neutral buoyancy, kneeling**
 - In standing depth water, use BC vent control to descend and kneel on the bottom.
 - Inflate/vent BC in small bursts, with BC control held high when venting.
 - If necessary, adjust a student's weight by adding or removing weight from weight belt or purpose-designed weight pouches.

Note: Where this is not practical, the use of clip-on weights, which can be easily and securely attached to D-rings on the weighting system is recommended. If it is necessary to add weight to a BC pocket this should be limited to a maximum of 2 kilograms. Ensure that this cannot accidentally come free during the session and that weighting systems are properly adjusted for subsequent dives.



- **Adjust buoyancy lying flat**
 - Lie flat on bottom
 - Adjust buoyancy as before by inflating/venting BC in small bursts and using breathing for fine control.
 - Ensure BC control held high when venting.



- **Hover clear of bottom**
 - Release BC controls and keep hands still in front of you.
 - Avoid touching the bottom with hands, avoid sculling with hands.
 - Hold the hover clear of the bottom, using breathing for fine control as before.

- **Check trim**
 - Ensure students are reasonably horizontal in the water.
 - Excessive head down or feet down orientations should be corrected by either adjustment of cylinder position in BC or repositioning of weights.
- **Swim at constant depth, develop finning action**
 - Swim for a minimum of 20m maintaining same depth with minimal use of hands/arms (extend as necessary if corrective action is required).
 - Check that finning action is from hips with no excessive cycling from the knees. Adjust buoyancy if needed but avoid continually holding controls while swimming, so that students develop the skill of finding them quickly when needed.
 - Check trim.



5. Swimming underwater – in deeper water

Progressing from the previous exercise, students learn to control their buoyancy while swimming at changing depths. Continue communicating with other divers using hand signals and monitoring instruments.

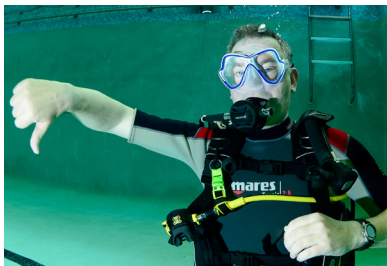
- **Buoyancy adjustment with changing depth**
 - Descend in standing-depth water and adjust for neutral buoyancy using BC.
 - Swim from shallow water to deeper water, covering about 25m, without touching the bottom or floating to the surface.
 - If necessary, adjust buoyancy by inflating/deflating the BC in small bursts every 5m or so.

- Swim back to shallow water.
- Repeat this exercise several times.



- **Use hand signals**

- Throughout this section, include the use of clear, slow underwater hand signals for instructions.
- Use 'OK', 'stop', 'up', 'down', plus any appropriate instructional signals needed to deliver the module contents.



- **Practise swimming underwater**

- Swim between different depths over a distance of 50m and check for good finning action.
- Check for good attitude and trim.
- If problems are still experienced with attitude control, adjustments to the distribution of any weights carried or to the position of the cylinder in the BC may be necessary.

6. Remove scuba – in standing depth

As for kitting up, where the location permits, in a swimming pool for example, de-kitting while in standing-depth water will make students' first experience of scuba more comfortable. Best practice is to keep demand valves in place until scuba kit is removed.

- **Remove fins**
 - Lean on buddy or other suitable fixed object for support
 - Use figure 4 position for stability.
- **Remove weight belt**
 - Remove weight belt, securing the free end to prevent weights sliding off, or remove integral weights.
 - Take care to place weight belt down carefully and not drop it on toes or pool tiles.
- **Remove scuba kit**
 - Buddies assist each other to remove scuba kit
 - Ensure it is laid down on the pool side, demand valves placed on top.
- **Exit water**
 - Leave the water by wading out.
 - Or if using a ladder, demonstrate climbing the ladder using the principle of three-point contact
 - Return to the water and ask each student in turn to climb the ladder and wait beside it, positioned a safe distance from the water's edge.
 - Ensure you and other students stand well back in case a student falls from ladder.
 - Take particular care if students need to exit the water in scuba.

7. Equipment care

Divers need to take care of the equipment upon which their lives depend. In this first module, this must be demonstrated and carefully supervised.

- **Wash kit**
 - Explain the importance of rinsing all dive kit in fresh water, even after pool use.

- **Store kit**
 - Turn off gas, purge regulator and disassemble scuba equipment
 - Fit regulator dust caps
 - Store items in a way that they can dry out.



8. REAP debrief

Using the REAP format, debrief students making sure that everyone has enjoyed their first lesson and highlighting the areas of progress that they have made. Offer constructive feedback and explain how they will further develop their skills in the next module.

- **Review**
 - Briefly playback the skills covered in the lesson and remind students of the lesson objectives.
 - Ensure that the students note the configuration of equipment that they have used, particularly the amount and location of any additional weight required, when preparing their equipment for future lessons. This should also include cylinder size, BC size and position of BC straps.

- **Encourage**
 - Praise good performance.
 - Provide support and comfort if things haven't gone so well.
- **Assess**
 - Offer constructive feedback to enable students to identify areas for improvement.
- **Preview**
 - Explain how students will further develop their skills in the next module.

Skills performance standards

At the end of this lesson, students should be sufficiently competent to achieve the following skills performance standards without supervision, in the water conditions that they have experienced.

Use of mask, fins and snorkel Students should be able to fit and use basic equipment safely for surface swimming in a sheltered-water environment. Students should be able to clear a snorkel of water while swimming on the surface, face down. The method of clearing will depend on the type of snorkel used. It is acceptable for students to need more than a single 'blow' to clear but they should maintain a face-down orientation throughout.

Breathing from scuba Students should be able to safely breathe from scuba in sheltered water and understand the need to breathe normally at all times. Students should also understand the importance of routine gas checks and know how these are used during a dive.

Buoyancy control Students should be able to adjust for neutral buoyancy using weights and BC controls, fine-tuning with breathing. At this early stage, it is not expected that students will be able to hold a given depth for any length of time.

Horizontal trim Students should be able to achieve a reasonably horizontal position underwater without excessive head-down or feet-down orientations.

Underwater swimming Students should have developed a basic leg action where kicking comes from the hip and the knee is kept relatively straight (there should be no excessive cycling motion).

Signals Students should be able to use and understand the signals for 'OK', 'stop', 'up', 'down' and understand the teaching signals 'you watch me' and 'you do'.