BSAC
Dive with us

SNORKEL INSTRUCTOR MANUAL

Experience Snorkelling • Dolphin Snorkeller
Snorkel Diver • Advanced Snorkeller

Cover image: Zebs Ebdy

Contents

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Introduction

Becoming a competent snorkeller requires an integrated combination of understanding, practical skills and experience of the underwater environment. This can be achieved through a progressive system of training and build up of experience. This Instructor Manual defines the training and experience requirements appropriate to each of the BSAC snorkel diver grades; Dolphin Snorkeller, Snorkel Diver, Advanced Snorkeller and Snorkel Dive Manager. It also provides the teaching materials instructors need to deliver the training for all grades up to Advanced Snorkeller and gives guidance on how to assist snorkellers to progress to the Snorkel Dive Manager qualification.

The BSAC Snorkel Training system

A 'try snorkel' taster session

Dolphin Snorkeller, aimed primarily at children and young people, is divided into a series of practical skill sessions with the reward of a named dolphin sticker on achieving a set of specified skills. The dolphin stickers build on each other towards the overall award of BSAC Dolphin Snorkeller qualification and badge.

Snorkel Diver is a combination of practical skills and theory knowledge building towards the BSAC Snorkel Diver award. As BSAC Dolphin Snorkellers will have already completed the practical elements of Snorkel Diver on the Dolphin Snorkeller Course, they can become BSAC Snorkel Divers by completing the Snorkel Diver theory sessions and assessment.

Advanced Snorkeller progresses the skills learnt on the Snorkel Diver course and covers more advanced snorkelling skills, techniques and knowledge.

Snorkel Dive Manager is a series of modules and Skill Development Courses that need to be completed for the award of Snorkel Dive Manager to be granted.

Contents of this Instructor Manual

All teaching materials for BSAC snorkelling courses are provided electronically. Course outlines and theory and practical lesson notes are published in the format of a printable manual, as Adobe pdf files. The manual contains a separate section for each snorkel diver grade. Visual Aids (VAs) are supplied as PowerPoint files. The teaching materials provided for each grade are as follows:

Experience Snorkelling

Course outline

Practical lesson notes

Dolphin Snorkeller

Course outline

Practical lesson notes

Snorkel Diver

Course outline

Theory lesson notes

Practical lesson notes

PowerPoint visual aids

Advanced Snorkeller

Course outline

Theory lesson notes

Practical lesson notes

PowerPoint visual aids

Instructional philosophy

Throughout this manual information and skills are presented in progressive small steps. Information and skills are, of necessity, imparted in a training environment so instructors should encourage their students to adopt a 'thinking' approach to snorkel diving, so that they will be able to adapt their knowledge and skills later when they encounter different situations in 'real' snorkelling. For the same reason instructors should always relate the training to 'real' snorkelling.

There is a deliberate element of repetition, which is an important feature because **where a new skill is being learned, just performing it once may not be sufficient to ensure that it can be reliably performed in the future. Repetition helps to ensure the consolidation of a skill.**

How to use this manual

The information contained in this manual defines the scope and depth of knowledge, skills and experience required for each BSAC snorkel diver grade. In order to maintain a consistency of application, no additions to, or deletions from the scope and depth of this training and experience requirements is permitted. This does not, however, imply a dogmatic adherence to the detail of individual techniques or presentational styles. Given the infinite variety of snorkel diving conditions, what is required are 'thinking instructors' who adapt the training, where required, to ensure that it is appropriate to the actual conditions under which the trainees will normally snorkel dive. The detail provided in these notes is there to ensure that, in adapting techniques, instructors can maintain the right scope and depth of training.

The notes are also written with sufficient detail to enable inexperienced instructors to feel confident that they understand the training requirements. The level of detail is therefore quite comprehensive in the early stages of training where these instructors will be most active. Where appropriate, advice should be sought from more experienced instructors as to how to adapt the training to local circumstances.

The circumstances assumed for the notes in this manual reflect the most common application - learning in a swimming pool in the UK. Where training takes place directly in sheltered water, either in the UK or outside the UK, some aspects of adaptation will be required. Where the nature of the adaptation is predictable, such as wearing protective clothing, appropriate advice on how to adapt skills training is provided in the relevant practical lesson notes. Where the adaptation cannot be predicted, such as how to obtain weather forecasts outside the UK, the notes indicate where instructors should substitute the corresponding local information.

The notes provided in this manual are not intended to be used as lesson prompts but to provide sufficient detail of lesson content to ensure the achievement of consistent standards of scope and depth of content. Instructors should therefore compile their own lesson prompts in their preferred format.

Visual aids for all the classroom lessons are provided.

Instructor requirements

It is a BSAC requirement that all instruction be carried out, or be supervised, by a Qualified Instructor (QI) who holds an appropriate snorkel diving qualification for the level being taught.

Instructor requirements, both in terms of qualification and ratio of students to instructors, are defined in the course outline for each snorkel diver grade.

Supervision requirements for assistant instructors are also defined in the course outline for each snorkel diver grade.

The following terminology is used:.

On-site supervision – the supervising QI must be present at the venue where training is carried out while instruction is in progress. The QI will previously have briefed the assistant instructor to assist them to prepare for the lesson and will discuss how the assistant instructor felt that the lesson went immediately afterwards.

Direct supervision – the assistant instructor who is carrying out instruction must be continually monitored by the supervising instructor, who must also be in a position to intervene in the lesson if safety considerations so demand. For in-water instruction this means that the supervising instructor must be in the water with the group under instruction.

Risk assessment

Throughout all training, instructors have a duty of care to their students wherever training is being carried out. Instructors should therefore ensure that they carry out an appropriate risk assessment for the venue and the circumstances.

Risk assessment is in fact already inherent in the way in which branches, centres and individual snorkellers go about organising their training and snorkel diving. For example, for open water snorkel diving, dive planning and dive managing include many activities which are designed to assess and control risk. In the classroom, consideration of access to fire exits is another example. Risk assessment is therefore nothing more than an application of common sense to safety issues, in a structured way, but is nonetheless an important element of snorkel diving instruction.

Lesson sequencing

The logical sequence of lessons for each diving grade is detailed in the relevant course outline.

Classroom lessons

Every lesson is supported by notes, which have the following general structure:

Introduction – Development – Summary

Thumbnail illustrations alongside the notes key the information to the appropriate visual aids. As snorkelling can be taught to a broad age range of students, ***Instructor notes*** are included to assist when teaching children.

The visual aids reflect the scope and depth of information in the notes. If necessary, instructors may personalise them to their own presentational style or use the content to produce alternative types of visual aid.

All visual aids are supplied in Microsoft PowerPoint 2003 format. Users of later editions of PowerPoint may need to adjust the visual aids in order for them to run smoothly. Alternatively, use the PowerPoint 2003 viewer. VAs are stored in the VA folder within each diver grade main folder. The file for each lesson is named to correspond with the appropriate lesson code. Each file concludes with a dark blank slide to prevent unprofessional looking reversion to the PowerPoint screen at the end of the lesson when using a computer based presentation.

In all classroom lessons, instructors should utilise adequate means of checking that the information they have imparted has been absorbed and understood by their students ("check for transfer").

Instructors should encourage their students to study their manuals, which cover both theory and practical information.

Practical lessons

The lesson notes for practical lessons are arranged in a logical progression through the build up of new skills, and include an element of repeat training for consolidation or, in the case of later lessons, refresher training. Although broken into specific lessons, the sequence of exercises is such that, should circumstances preclude a lesson from being completed, the subsequent lesson can continue on from where the break occurs. When this occurs, the lesson should only be signed up in a snorkel diver's Qualification Record Book when all the elements stipulated for that lesson have been satisfactorily completed.

The lesson notes assume that all skills, even where broken down into intermediate stages, are first demonstrated by the instructor so that the students understand exactly what they are required to do. The students then mimic what they have been shown under the supervision of the instructor. During the mimic, the instructor should assess whether the skill is being performed correctly and should be prepared, where necessary for safety, to intervene. Should the skill not be performed adequately, corrective instruction should be given before the student repeats the skill

The lesson notes also assume that all lessons include a briefing, which contains all the elements of a 'SEEDS' brief:

S - Safety aspects relevant to the exercises and conditions

E – Exercise/s to be performed and their relevance to 'real' snorkelling

E – Equipment relevant to the exercise/s

D – Discipline ie how the instructor wants the students organised and/or arranged

S - Signals that will be used, both normal snorkel diving and exercise specific

While all the above items should be covered, it is frequently more logical to cover them in a different order.

The notes likewise assume that all lessons conclude with a debrief that contains all the elements of 'REAP':

R – Review the exercise/s carried out

E – Encourage the students by complimenting them on aspects performed well

A – Assess their performance tactfully where it was less than satisfactory and offer advice for improvement

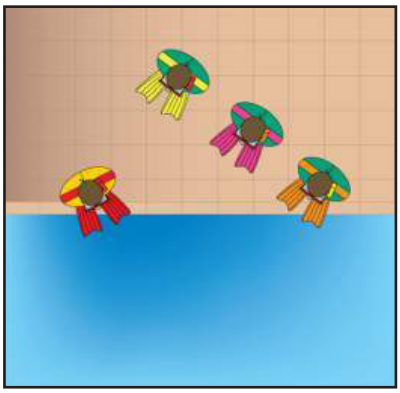
P – explain the **Progression** of their skills in future lessons

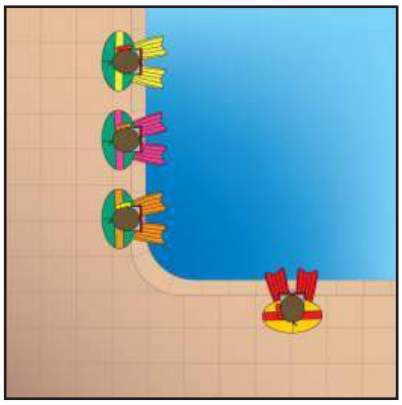
Because the conditions encountered in open water are more variable than in sheltered water, the instructor notes perforce become less specific and rely on instructors to use their knowledge and experience in interpreting how to implement the lessons in the prevailing conditions.

Instructor positioning during practical lessons

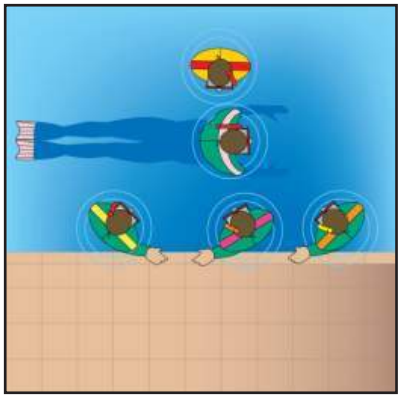
Students can only mimic the instructor's demonstration if they can see it. The diagrams below are a reminder of suitable positioning for the instructor (red fins, yellow suit) relative to the students.

Teaching entries



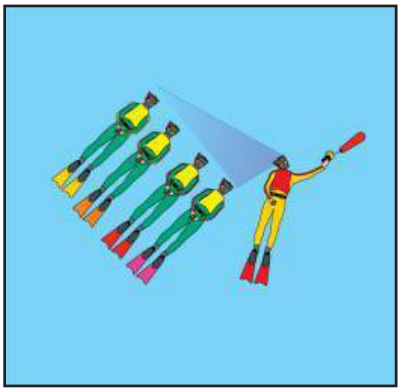


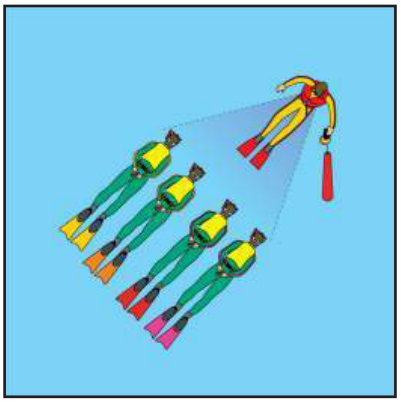
In-water positioning



Students should have something firm to hold onto whilst watching a fellow student perform a skill. The instructor is in a position not only to monitor the student performing the skill but also easily see the remaining students in the group.

In-water position when moving in a group





Snorkelling experience

To supplement the acquisition of skills, snorkellers also need to gain experience in a range of snorkelling conditions. Like the acquisition of skills, this experience needs to be built up progressively and is defined as a required number of snorkel dives.

Because of the wide range of snorkel diving conditions encountered by branches and centres across the world, it is not possible to define a single set of conditions which will be appropriate to all. Instead, for Snorkel Diver and Advanced Snorkeller, a group of conditions is defined, of which a specified number must be experienced. Instructors should select those conditions which are most appropriate to the sort of snorkel diving their students are likely to encounter.

Depending upon the conditions chosen and the students' recent experience, prudent instructors will, where appropriate, introduce intermediate stages in a progressive build up to achieving the requirement. For example, where a Snorkel Diver wishing to qualify for Advanced Snorkeller has not snorkel dived for some months, it would be sensible not to go straight into adventurous conditions, but to first dive in more moderate conditions, within the Snorkel Diver's past experience, as a refresher.

Assessments

Theory

For each snorkel diver grade up to Snorkel Dive Manager, three different multiple choice question papers, together with student answer sheets and instructor marking sheets are available on request from BSAC HQ.

Multiple choice questions do not suit everyone and instructors should remember that the objective of the assessment is to examine the students' snorkel diving knowledge not their literacy or their expertise in examination techniques. Where students prefer, questions may be read out to them for clarity, or they may take an oral assessment, based on the theory question papers.

Alternatives to the conventional written theory test for Snorkel Diver are especially appropriate when training children or anyone with special needs. One method to consider is a fun quiz technique based on either the quiz questions at the back of the Go Snorkelling manual, or questions from one the multiple choice question papers. The instructor gives a set of answer cards to each student so they can select a card to show in response to a question. The cards might be different colours, or labelled a, b, c, d, or different shapes (egs, fish, dolphin, octopus, lobster). The instructor asks a question and the students hold up the card which corresponds to the answer. For example, the instructor might hold up a piece of equipment and say "if you think this is a snorkel hold up the blue card" (or card a, or 'the dolphin', etc), "if you think this is a mask hold up the white card", and so on. The instructor should take the opportunity to make any corrections to wrong answers during the quiz, as well as making a note of each student's answer and working out the overall scores at the end of the quiz.

Practical

Practical skills are assessed by continuous assessment throughout the course. Particular performance standards which have to be achieved are identified in the lesson notes by the words 'competent and confident'. Definitions of the performance standards relevant to a lesson are also listed at the end of the notes for that lesson. Instructors should provide appropriate corrective instruction where necessary to students who are unable to meet the standards. A lesson should not be signed off in a student's QRB until the student has achieved all the specified performance standards for that lesson.

Session objectives

Experience Snorkelling is a 'Try Snorkel' session which introduces students to basic snorkelling skills. The session should be fun whilst also aiming to increase the students' in-water confidence. It should therefore start in shallow, waist deep water to build up the students' level of comfort. Introduction of basic skills should not be rushed because the pace at which confidence building can occur varies according to individual student's needs and previous in-water experience.

Achievement targets

At the end of this session students should:

- Be able to fit fins
- Understand the key features of a face mask and be able to correctly fit and clear it on the surface
- Be able to correctly fit and clear a snorkel by blowing
- Be comfortable breathing from a snorkel whilst floating face down on the surface
- Be comfortable finning forwards, stopping and turning around whilst breathing from a snorkel
- Attempt surface dives – **optional** depending on student confidence
- Understand that an 'OK' signal is a question and answer
- Understand that, if going on holiday and snorkelling
    - Stay shallow - you are a beginner
    - Don't touch marine life
    - Always have someone watching you and make sure you can always see them
    - Remember body protection, particularly if snorkelling in hot sunshine – t-shirt, hat
- Understand that BSAC offers snorkelling courses through its branches and centres.

Session contents

1. Fitting session

Although the students will understandably be keen to go snorkelling, they need to be kitted out with basic equipment before getting in the water.

- The instructor should allocate each student a set of basic equipment, together with thermal protection and a buoyancy aid if necessary. Check that it fits and place it where it will be accessible from shallow water. During the fitting session make students aware of the key features of the fins, mask and snorkel. If running the session where sun protection is necessary, ensure students have suitable protection such as t-shirt and suncream.

1. Briefing

Explain the session objectives to the students and emphasise how less haste at this point will mean more speed overall. As this is probably their first encounter with snorkelling equipment, stress the importance of stopping and standing up if they have a problem. Cover all elements of a SEEDS brief (Safety, Equipment, Exercise, Discipline and Signals) and remember to check that students can clear their ears. Make it clear that any students with a cold or sinus infection should not attempt surface dives.

2. Entry into shallow water – fitting fins

Depending on the venue and the type of entry, decide whether it is easier to fit fins before or after entry. Either fit fins while sitting by the water or on steps, or fit fins in the water holding onto a buddy or suitable fixed object for support. Whether fitting fins in or out of water, demonstrate how to walk safely with fins, either backwards or sideways.

Demonstrate an entry using steps or a ladder, or an entry by wading into waist deep water.

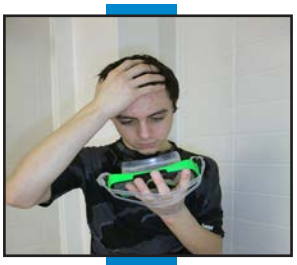
3. Finning action - static

- To demonstrate that efficient use of the legs requires a specific finning action, sit the students, supported by their arms on the waterside, on steps or supported in waist deep water, with their legs forward and unobstructed. Tell the students to make exaggerated cycling movements - they will soon discover, after much splashing, that this is an inefficient way to use fins, and that it is quite hard work! In the same position, get the students to straighten their legs and fins and using a gentle rolling action from the hips, flex their legs slightly as they fin. Point out how this action makes for more efficient finning.

4. Finning action - moving

- In waist deep water, demonstrate finning forwards with a smooth leg action and arms forward, and get the students to repeat. Maintain control of the group so they do not, at this stage, fin into deeper water. This can be achieved by having them fin in a straight line with clearly defined turn around points, or fin in a circle in front of the instructor.
- Repeat the above with the addition of stopping, turning around using the hands as paddles and finning back to the start point.

5. Fit and check mask seal – standing depth



- Demonstrate how to demist a mask with saliva or demist solution and rinse out (depending on the venue, this can be done prior to entry).
- Demonstrate how to position a mask correctly on the face – and remind students that once the mask is on they will need to breathe in and out through their mouths:
    - Wet the face with a little water and clear any hair from the face, particularly the forehead
    - Hold the mask in one hand with the strap placed in front of the mask
    - Check the mask seal is clear and place the mask on the face
    - Still holding the mask with one hand, draw the strap back over the head
    - Check that hair is not trapped under the seal and that the strap positioning is not too high or low on the back of the head and just tight enough to hold the mask in position.
- Demonstrate how to check the mask seal for leaks:
    - Take a breath, bend forwards and submerge the face horizontally in the water, straighten up and show there is no water in the mask
    - Get the students to repeat

  When students do this it helps their balance to hold on to either a buddy or a suitable fixed object for support, before taking a breath, bending forward and submerging the face.

Quite often, at this stage, some water may enter the mask or it may begin to fog up - check that students are not still trying to breathe through the nose.

- Demonstrate how to drain a mask:

  If water seeps into the mask stand up (if necessary hold onto a buddy or suitable fixed object for support), gently hold the frame at side of the mask with one hand, tilt the head slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face to break the seal. Explain that this action allows any water to drain away.

  If the mask fogs up, remove it and repeat the demisting procedure.

6. Fit snorkel and practise with mask and snorkel – introduce ‘OK’ and ‘up’ signals

Demonstrate how to secure a snorkel to give comfortable alignment:

- If the snorkel has no mask clip attachment, slide it under the mask strap at the side of the face and position it so the mouthpiece is easily accessible. Adjust snorkels that are already fitted to the mask so that the mouthpiece is easily accessible.
- Check that the snorkel position gives comfortable alignment and, with mouthpiece in, allow students to get used to breathing in and out through snorkel tube before next step.

Explain that once the snorkel is in the mouth it is difficult to talk, whether on the surface or underwater - introduce the ‘OK’ and ‘up’ signals for the following demonstrations.

Demonstrate breathing through a snorkel with face submerged, static:

- Give the 'OK' signal and ensure there is a response, then bend forwards to submerge your face in the water. Demonstrate a comfortable breathing rhythm by counting each 'breath out' on the fingers of one hand held out of the water – four or five cycles should suffice. Get the students to repeat, holding their buddy or a suitable fixed object for support. Check each student in turn and give an underwater 'OK' signal, followed by an 'up' signal after four or five breathing cycles.
- Demonstrate breathing through a snorkel lying forwards on the surface with face submerged.
- Students can mimic this demonstration as a group with 'OK' signals being given and responded to underwater. Use the 'up' signal to end the exercise.

7. Snorkel clearing using blow method - static

Demonstrate the blow method of snorkel clearing:

- Start in standing position and place one hand gently at the top of the snorkel (not covering the hole).
- Take a breath and while bending forwards also bend your knees to submerge your head in the water until your hand is covered with water, which means snorkel will flood.
- Stand up and, tipping the head back slightly, forcibly exhale to expel water and then continue breathing through snorkel.
- Get the students to repeat.
- Repeat demonstration lying on the surface and get students to repeat

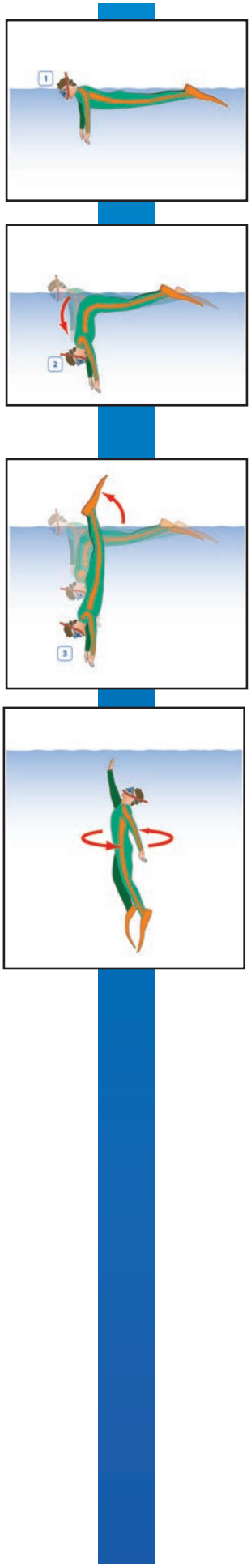
The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves usually require less effort to clear, but using this technique will help students should their drain valve be ineffective.

8. Using mask, fins and snorkel - moving

- In waist deep water, demonstrate finning forwards whilst looking down and breathing through a snorkel. Demonstrate different positions of arms to make the body as streamlined as possible – think fish!
    - o arms forward
    - o arms held at the side of the body
    - o hands placed in the small of the back
- Get the students to repeat.

  Maintain control of the group so they do not fin into deeper water. This can be achieved by having them fin in a straight line with clearly defined turn around points, or fin in a circle in front of the instructor.

9. Surface dives - optional



Depending on students' ability/confidence, demonstrate surface dives in deeper water.

- Explain to students that they may feel pressure on their ears underwater (some may have experienced the same type of sensation when flying), so may need to 'equalise' pressure in their ears underwater. Demonstrate ear clearing on the surface by any of the following methods:
    - o Pinch the nose with thumb and forefinger and gently blow through the nose (which is why a mask has a nose pocket whereas swimming goggles do not).
    - o Pinch the nose with thumb and forefinger and swallow
    - o Swallow and wiggle the jaw
    - o Put the tongue to the roof of your mouth.

Check that students can clear their ears before attempting to surface dive

- Demonstrate a headfirst surface dive. Use an object or marked point on the bottom as a target to focus on when doing the dive.
    - o Start in a prone position lying on surface looking down
    - o Take the arms down to point at the target and bend at the waist so the upper body and arms are at right angles to the legs
    - o Surface and blow clear the snorkel
    - o Repeat, but exaggerate the bend at the waist to give a bit more momentum to help lift legs straight up and out of water. Aim to do a handstand on or near the target, without moving your fins
    - o Surface and blow clear the snorkel
    - o Repeat but move forwards out of the handstand using fins when underwater, then surface and blow clear the snorkel
- Get the students to repeat the above.

  This exercise is intended for students with sufficient ability and confidence, and is optional.

10. Free finning session – working as buddy pairs

Pair up students, remind them of the 'OK' signal and allow them to snorkel together. If they are going to include surface dives, brief them on 'golden snorkelling rule': one up one down.

11. Exit water

Depending on the venue and the type of entry, decide whether it is easier to remove fins before or after exit. If removing fins in water, ensure students hold a buddy or a suitable fixed object for support. Whether removing fins in or out of the water, repeat the demonstration of how to walk safely with fins, either backwards or sideways, that was given to the students during the exercise on fitting fins.

12. Debrief

Using the 'REAP' (Review, Encourage, Assess and Progression) format, make sure that everyone has enjoyed their first session and highlight the areas of progress they have made. Inform students of 'Progression' from this point on, including the following points:

- Remind them that this session was only an introduction to snorkelling so, if they go snorkelling in the future:
    - Stay shallow – they are beginners.
    - Always have surface cover - someone watching you when you are snorkelling. They should make sure they can always see the person acting as cover so that if assistance is needed, it can be provided quickly.
    - Do not touch marine life or damage coral/reefs with hands or fins.
    - Remember body protection such as t-shirt, hat, and suncream, if snorkelling in hotter climes.
- Advise students how they can continue through a BSAC Branch or Centre, should they wish to progress their snorkelling skills.
- Hand out BSAC centre or branch packs.

Dolphin Snorkeller

Course aim

This course is specifically designed to introduce snorkelling to children via a series of seven progressive, fun sessions. Each session is named after a different type of dolphin and completion of a session results in the award of the corresponding dolphin sticker. Once students have collected a complete set of dolphin stickers, they can be awarded the grade of BSAC Dolphin Snorkeller and presented with a cloth badge and certificate. Dolphin Snorkeller training packs can be ordered from BSAC. The first practical session is preceded by a brief introduction to the course.

Dolphin Snorkellers who wish to continue their snorkel training need only to complete the Snorkel Diver theory lessons and theory assessment to be awarded BSAC Snorkel Diver.

Course outline

The Dolphin Snorkeller course consists of the following seven progressive practical elements, which may be carried out either in a swimming pool or in pool-like sheltered open water conditions:

- Bottlenose Dolphin - basic water confidence

- Spinner Dolphin – fitting and clearing mask and snorkel

- Dusky Dolphin – fitting fins, finning with mask and snorkel

- Striped Dolphin – entries and exits, finning in a buddy pair

- Clymene Dolphin - clearing mask and snorkel underwater, surface dives

- River Dolphin – finning techniques, feet first dives, buddy rescue

- Risso's Dolphin – skills assessment

On completion of all seven Dolphin levels, the BSAC Dolphin Snorkeller qualification can be awarded.

Definitions of a Dolphin Snorkeller

A Dolphin Snorkeller is a diver who has shown that they are competent and confident to carry out, in a sheltered water environment, the snorkel diving skills set down in each dolphin sticker lesson.

A Dolphin Snorkeller is defined as a diver who is competent to conduct dives:

- with another Dolphin Snorkeller, Snorkel Diver, Advanced Snorkeller or Snorkel Dive Manager within the restrictions of the similar conditions already encountered during their training
- with an Advanced Snorkeller or Snorkel Dive Manager to expand their experience beyond the conditions encountered during their training, under the supervision of a Snorkel Dive Manager
- to a depth which is initially limited to the maximum experienced during training, but which can subsequently be extended progressively, under the supervision of a Qualified Instructor (QI)
- under the on-site supervision of a Snorkel Dive Manager or designated responsible adult with respect to site selection, conditions and dive plan
- where other divers or responsible adults, capable of providing assistance and rescue, are available at the surface
- within BSAC safe diving practice recommendations.

Instructor requirements

BSAC Dolphin Snorkeller training is required to be carried out, or supervised by, a QI who holds a minimum qualification of Snorkel Instructor.

Student/Instructor ratios

The lessons notes assume a lesson duration of up to one hour and a maximum ratio of six students per instructor. This ratio may be reduced, depending on the water conditions, the time available, and age of the students. Alternatively the lessons may be split over more than one session.

Definitions

The following terms, used throughout the Dolphin Snorkeller instructor notes, are defined thus:

Sheltered water – is a well-maintained swimming pool or an area of open water which provides similar conditions. Sheltered water is generally less than 4m deep, has a stepped or gently shelving unobstructed bottom of firm composition, has adequate visibility (minimum 5m), and is free from significant water movement, from either waves or currents.

Standing depth – water that is between waist and chest deep, allowing students to either stand comfortably, or to kneel and be fully submerged.

Deeper water – water that is between approximately 2m and 4m in depth.

Sheltered water lessons

The course lessons are structured to allow flexibility and progression tailored to the students' pace. Instructors should take care to view all aspects from the students' point of view, as their perceptions may be very different to those of the students.

The course concentrates on the students acquiring basic skills, such as finning, to a level where they become relaxed in water and are able to develop confidence in their own abilities and further their snorkelling skills.

A further important aspect of this course is developing the 'buddy' concept from the outset. Instructors should underline this role by teaching the benefits of buddy assistance while kitting up and de-kitting, the importance of the buddy check prior to **every** snorkel dive, monitoring the buddy while in water, particularly when surface diving, and using the one up, one down principle. This emphasis should start from the earliest sheltered water lesson.

The structure of the lessons is based on the demo/mimic/assess principle. Instructors should not rely on the students remembering every detail from the briefing. Demonstrating each exercise immediately before students attempt it will ensure that they understand what is expected of them at each point in the lesson.

A number of repeat exercises are included for consolidation of certain skills. It is important that these are carried out so that the skills become second nature to the students and require less mental effort.

If early lessons are conducted in a swimming pool but later ones are in sheltered open water, consider including an additional session to familiarise students with wearing protective clothing and enable an initial assessment of any weight required to adjust their buoyancy. However, students should be carefully monitored to avoid them overheating when wearing thermal protection in warm pool water.

Adapting lessons for differing conditions

The lesson contents assume a swimming pool containing warm water or a sheltered water sea conditions in a warm climate. However snorkellers can learn to snorkel dive in sheltered water conditions which require various levels of protective clothing, and this may introduce some difficulties. In particular, the wearing of gloves will affect students' dexterity, and hoods will impact the ease with which masks can be sealed and cleared. Fortunately the impact of these issues is generally only that extra time is required.

Performance assessment and standards

Training for Dolphin Snorkeller includes a number of progressive assessments to achieve each level of the Dolphin Snorkeller badge, covering basic swimming competence, in-water comfort and practical snorkel diving skills.

Swimming assessment

A basic level of comfort in the water is essential for Dolphin Snorkellers. This is evaluated during a swimming assessment, which consists of a 50m freestyle swim. Students should complete this assessment comfortably, with reasonable ease, at their own pace - speed is not one of the relevant criteria.

Practical assessments

By the end of the Dolphin Snorkeller course, students should be able to perform the key skills competently and confidently. Sufficient repetition is built into the syllabus to enable this to be achieved. This is an important element in developing the student's confidence in their own abilities to snorkel dive with another snorkel diver, independent of an instructor.

Some of the skills learned during training are pre-requisites for further skills to be learned later. For this reason, the practical assessments are spread individually throughout the sessions rather than

grouped together at the end of the course. On completion of each section an appropriate Dolphin sticker is awarded. On completion of all the Dolphin levels, the BSAC Dolphin Snorkeller award can be given.

Because these assessments of key skills require that students are not only able to perform the skill satisfactorily but also demonstrate an appropriate level of confidence in doing so, they are identified in the relevant lesson objectives and notes with the use of the definition **competent and confident.** Students should have progressed sufficiently to be able to achieve the relevant performance standards without supervision, in the water conditions appropriate to that lesson. The relevant performance standards are listed at the end of each lesson's notes.

Objectives

The aim of this 'meet and greet' session is to introduce the branch to students. As this is a course primarily aimed at children, it is a good idea to invite parents or guardians to this session so they too understand about the branch/centre and BSAC.

Achievement targets

At the end of this session students, parents or guardians should:

- Have been introduced to the structure of your branch/centre and BSAC
- Understand the benefits of BSAC membership
- Understand the benefits of training and snorkelling with the branch/centre, and the cost implications
- Understand the aims of the Dolphin Snorkeller course
- Understand the ongoing progression after qualifying as a Dolphin Snorkeller

Instructor note: the following items will be useful as additional Visual Aids: *Student manual, Qualification Record Book, copy of Dive Magazine.*

Aims

This is a welcome and introduction to your branch/centre and BSAC, and a description of the support you give to training and snorkelling.

Introduction to the Dolphin Snorkeller Course

Our BSAC branch & Snorkel Training

Begin by explaining that your branch/centre is one of many that form BSAC, the largest diving club in the world. If a student has to move from your branch/centre because of work or personal reasons there is always the opportunity to join another BSAC branch or centre and continue snorkelling and training.

Introduce the key members of the branch that the students will work with.

Benefits of training with the branch?

Remember that the students are new to the branch/centre and may not be aware of all its benefits. Explain your branch's activities to support them through their initial and ongoing training and snorkelling.

If your branch/centre has its own equipment, arrange a tour of your facilities. If your branch does not have equipment, explain how you operate, ie where kit can be purchased or borrowed etc.

What will it cost?

Having outlined the branch/centre activities, remind students (parents or guardians) of the costs involved to allow them to plan ahead financially.

Dolphin Snorkeller training

Explain the aim of the Dolphin Snorkeller course.

As with all BSAC training, the course is designed to progressively build the student's skill and confidence base as safely as possible:

- Explain that the format of the course comprises a series of sheltered water lessons and the Dolphin Sticker system building progressively to the Dolphin Snorkeller badge.
- It is important to outline the branch 'domestics' such as when and where students are expected for the training sessions and the kit arrangements that your branch utilises for training sessions.
- It should be emphasised that commitment to the Dolphin Snorkeller training programme is important to enable it to run smoothly for other students and particularly the instructors.

Marine Conservation Society

The Marine Conservation Society (MCS) is the voice for everyone who loves the sea. MCS work to secure a future for our living seas and to save our threatened sea life before it is lost forever. Our wonderful seas, shores and wildlife are under threat. Almost nowhere in UK seas is marine wildlife safe from harm.

The work of the MCS helps to ensure that the sea's rich wildlife can be restored, fish stocks grow more plentiful and our beaches and seawater become cleaner. The MCS are pleased to be associated with BSAC in promoting safe snorkelling through the Dolphin Snorkeller Course and introducing young people to appreciate the wonders of marine life.

BSAC is pleased to promote the MCS, which does so much to help protect our fragile oceans. www.mcsuk.org

Lesson objectives

This lesson is intended to be a fun introduction to the Dolphin Snorkeller course, which increases the students' in-water confidence. It should begin in waist deep water to allow the students' level of comfort to build up. No equipment is used. No part of this lesson should be rushed because some students will take longer to gain confidence than others, depending on their personalities, their aptitude and their previous experience.

Achievement targets

At the end of this session students should:

- Demonstrate their in-water confidence by swimming 50m. This is not a timed swim because only in-water confidence is important at this stage, not speed or swimming technique.
- Be confident and competent doing a simple headfirst surface dive to the bottom and picking up an object. (Minimum pool depth 1.2m).
- Be able to understand and use the OK signal.

Lesson contents

If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, suncream, head protection.

1. **Briefing**

   Explain the above objectives to the students, emphasising how less haste at this point will mean more speed overall. Stress the importance of stopping and standing up if they have a problem. Cover all elements of a SEEDS brief and remember to check if contact lenses are being worn.

2. **Entry into shallow water**

   Demonstrate entry into the water, using the easiest type of entry appropriate for the venue – remember the golden rule, instructor first in.

2. **Swimming assessment**

   Students should show their in-water confidence by swimming 50m without mask, fins or snorkel using any technique they choose. This is not a timed swim because in-water confidence is more important than speed or swimming technique (see note about speed v haste, above). If the students are going to swim in water that is out of their depth, provide additional in-water support swimmers to help them should any problems arise.

3. **Surface dive to retrieve object on the bottom**

   The dive is preceded by a confidence-building exercise where students put their faces underwater while standing in waist deep water.

   - Putting face underwater
     - Demonstrate - hold lightly onto a buddy or fixed object for support, take a breath, pinch your nose, close your eyes, and bend forward so that your face is immersed in the water. Stand up and give an OK signal.
     - Repeat the above without holding your nose
     - Repeat but this time keep your eyes open (remember to check if any students are wearing contact lenses – if so, they should keep their eyes closed).
   - Check for ear clearing

     Explain to students that they may feel pressure on their ears underwater. Show them how to check that they can clear their ears before attempting the surface dive by demonstrating any of the following methods:

     - Pinch the nose with thumb and forefinger and gently blow through the nose
     - Pinch the nose with thumb and forefinger and swallow
     - Swallow and wiggle the jaw
     - Put the tongue to the roof of mouth
   - Simple head first surface dive collecting an object from the bottom
     - Demonstrate - start in a standing position, take a breath, move forward to lie on the surface above the object, take your arms down so that your hands point at the object, bend at the waist so your head follows your arms and your whole body tips down to the object. Recover the object and stand up, giving an OK signal.

     Technique at this stage is unimportant because the purpose is to build

confidence in going underwater. Get the students to repeat.

Instructor note: *If students are wearing contact lenses, guide them to the underwater object so they achieve the skill.*

4. **Exit water**

   Demonstrate an exit and remember - instructor last out.

5. **Debrief**

   Using the 'REAP' (Review, Encourage, Assess and Progression) format, make sure that everyone has enjoyed their first session and highlight the areas of progress they have made. If skills have met the performance standards below, award the Bottlenose Dolphin sticker.

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards in the water conditions experienced:

- **Swimming assessment** - Students should demonstrate their in-water confidence by a swimming assessment comprising of a 50m swim. Timing and swimming technique are not important.
- **Surface dive to retrieve an object** – Students should demonstrate their in-water confidence by diving under water and retrieving an object from the bottom. Technique is not important so long as ear clearing is covered for students' comfort and safety.

Lesson objectives

This is the second level of Dolphin Snorkeller and the main objective of this lesson is to introduce students to the mask and snorkel. To maintain confidence levels these skills should not be rushed - some students will take longer to learn new skills than others, depending on their personalities, their aptitude and their previous experience.

Achievement targets

At the end of this session students should:

- Be competent and confident in correctly fitting a face mask
- Be competent and confident clearing a mask of water on the surface
- Be competent and confident clearing a fogged up mask on the surface without removal
- Be competent and confident fitting a snorkel
- Be competent and confident clearing a snorkel using ‘blow’ technique
- Be competent and confident breathing from a snorkel with face and mask submerged in water

Lesson contents

Each student's equipment, including thermal protection and buoyancy aids if used, should be prepared and checked by the instructor at a 'fitting' session before starting the lesson. During the fitting session, point out the key features of the mask and snorkel.

If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen cream, appropriate head protection.

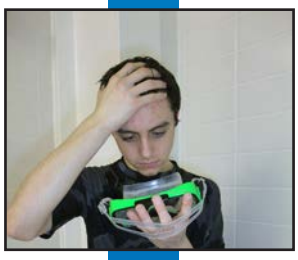
1. Briefing

Explain the above objectives to the students. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief.

2. Entry into shallow water

Demonstrate an entry appropriate to the venue – instructor in first. Entries can be performed before or after de-misting, rinsing and fitting the mask.

3. De-mist mask, rinse and fit correctly



This lesson element can be performed before or after entering the water.

- Demonstrate how to demist a mask with saliva or mask demist solution and rinse it out
- Demonstrate how to correctly position the mask on the face. Remind students that once the mask is on they will need to breathe in and out through the mouth.
    - o Wet the face with a little water and clear any hair from the face, particularly the forehead
    - o Hold the mask in one hand with the strap placed in front of the mask
    - o Check the mask seal is clear then place the mask on the face
    - o Still holding the mask with one hand, draw the strap over the head. Demonstrate the positioning of the strap: it should be centred on the back of the head, neither too high nor too low
    - o Check that no hair is trapped under the seal, the strap positioned correctly, and that it is just tight enough to hold the mask in position. Involve students in this check to introduce the buddy principle.

4. Check the mask seal for leaks

- Demonstrate: take a breath; bend forwards and submerge the face and mask in the water. Then straighten up and show that there is no water in the mask.

  Remind students that it may help them to balance during this exercise if they hold onto their buddy or a suitable fixed object for support.

  Quite often at this stage, some water may enter the mask so check the fitting. Also, masks may begin to fog up: check that students are not still trying to breathe through their nose.

4. Clear water from mask on surface

Demonstrate:

- Stand up (if necessary hold onto a buddy or suitable fixed object for support)
- Bend forward so that the face is in the water then, with one hand, gently ease the bottom of the mask seal to allow a little water to enter
- Stand up, hold the frame at the side of the mask with one hand, tilt the head

slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face to break the seal. Allow any water to drain away before the mask is re-sealed to the face.

5. Clear a fogged up mask

Demonstrate:

- Stand up (if necessary hold onto a buddy or suitable fixed object for support)
- Bend forward so your face is in the water and with one hand gently ease the bottom of the mask seal to allow a little water to enter
- Stand up, but bend forwards so the mask lens is horizontal to the water. Swish the water around inside the mask to remove the 'fog'.
- Stand up, hold the frame at the side of the mask with one hand, tilt the head slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face to break the seal. Allow any water to drain away before the mask is re-sealed to the face.

6. Fit snorkel to mask strap

- Demonstrate how to secure the snorkel to give comfortable alignment. Remind students that once the snorkel is in the mouth it is difficult to talk both on the surface and underwater – introduce the 'OK' again and 'up' signals for the following demonstrations.
    - For snorkels where there is no mask clip attachment, slide the snorkel under the mask strap to one side of the face and position it so the mouthpiece is easily accessible. Adjust snorkels that are already fitted to the mask strap so the mouthpiece is easily accessible.
    - Check that the snorkel position gives comfortable alignment and, with the mouthpiece in, allow students to get used to breathing in and out on the surface through the snorkel tube before next step.

5. Breathing from snorkel with mask and face submerged

- Begin the demonstration by giving an 'OK' signal. Ensure there is a response before proceeding. Bend forwards to submerge your face in the water. Demonstrate a comfortable breathing rhythm by counting each 'breath out' on the fingers of one hand held out of the water. Continue for four or five cycles.

Students repeat, holding a buddy or suitable fixed object for support. Check each student in turn, giving an underwater 'OK' signal, and then an 'up' signal when four or five breathing cycles have been completed.

6. Snorkel clearing using blow method - static

- Demonstrate the blow method of snorkel clearing:
    - Start in a standing or kneeling position and place one hand gently at the top of the snorkel (not covering the hole)
    - Take a breath, then while bending forwards also bend the knees to submerge your head in water until your hand is covered with water and the snorkel floods
    - Stand or kneel up and tip your head back slightly, exhale forcibly to expel water, and then continue breathing through the snorkel.
- Repeat demonstration lying on the surface and get students to repeat

The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves usually require less effort to clear, but using this

technique will help students should their drain valve be ineffective.

7. Exit water

Demonstrate an exit and then invite the students to exit. Remember the golden rule – instructor last out.

8. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their session. Highlight the areas of progress they have made and, if skills have met the performance standards below, award the Spinner Dolphin sticker.

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced.

- **Correctly fitting a face mask –** clear face of hair and place mask so that it is comfortable with strap centred on back of head.
- **Clearing a mask on the surface without removal** –allow some water into the mask, tip head back, ease mask seal to allow water to drain out before mask re-seals on face.
- **Clearing a fogged up mask on the surface without removal** – allow some water into the mask and, with mask lens horizontal to water surface, swill water around to clear 'fog' and then clear mask as above.
- **Correctly fitting snorkel and breathing from it with face and mask submerged –** snorkel fitted so comfortable. Bend forwards, submerge face in water, breathe from snorkel for four or five counts.
- **Clearing a snorkel using 'blow' technique** – allow some water into snorkel, tip head back slightly, breathe out forcibly to expel water and continue breathing through snorkel.

Lesson objectives

This is the third Dolphin Snorkeller lesson and its main objectives are to review the use of mask and snorkel and to introduce the use of fins. To maintain confidence levels these skills should not be rushed - some students will take longer than others to learn new skills, depending on their personalities, their aptitude and their previous experience.

Achievement targets

At the end of this session students should:

- Be competent and confident in correctly fitting a face mask
- Be competent and confident fitting a snorkel
- Be competent and confident in correctly fitting fins
- Be competent and confident at finning whilst using mask and snorkel.

Lesson contents

Each student's equipment, including thermal protection and buoyancy aids if used, should be prepared, and checked by the instructor, at a 'fitting' session before starting the lesson. During the fitting session, point out the key features of the fins.

If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen cream, appropriate head protection.

1. **Briefing**

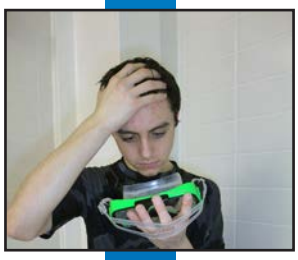
   Explain the above objectives to the students. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief.

2. **Entry into shallow water**

   Demonstrate an entry into waist deep water using steps, a ladder or wading – instructor in first. Entries can be performed before or after fitting mask, snorkel and fins.

3. **De-mist mask, rinse and fit correctly**

   - Review and demonstrate how to demist a mask, with saliva or mask demist solution, and rinse it. Show how to correctly position the mask on the face and remind students that once the mask is on they will need to breathe in and out through the mouth. Get the students to check each other for hair trapped under the mask seal.



4. **Correctly fit and breathe from snorkel**

   - Review and demonstrate how to secure the snorkel to give comfortable alignment. Remind students that once the snorkel is in the mouth it is difficult to talk, whether on the surface or underwater. Remind students of the 'OK' and 'up' signals, which will be used during the following demonstrations.
   - Review and demonstrate breathing from a snorkel with the face submerged. After giving the 'OK' signal and ensuring there is a response from the students, bend forwards to submerge your face in the water. Demonstrate a comfortable breathing rhythm by counting each 'breath out' on the fingers of one hand held out of the water. Continue for four or five cycles.

   Students repeat, holding a buddy or suitable fixed object for support. Check each student in turn, giving an underwater 'OK' signal, and then an 'up' signal when four or five breathing cycles have been completed.

5. Fitting fins

Depending on the venue and the type of entry, decide whether it is easier to fit fins before or after entry.

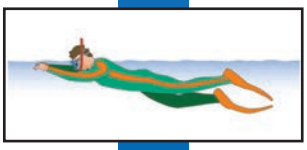
- Demonstrate how to fit fins while sitting by the water, on steps, or in the water using a buddy or suitable fixed object for support.
- Remind students that when wearing fins they should walk sideways or backwards, whether in or out of water.
- Demonstrate an entry, if not done earlier – remember the golden rule, instructor first in.

6. Static finning

- To demonstrate that efficient use of the legs requires a specific finning action, sit the students, supported by their arms on the waterside, on steps, or supported in waist deep water, with their legs forward and unobstructed. Tell the students to make exaggerated cycling movements: they will soon discover, after much splashing, that this is an inefficient way to use fins, and that it is quite hard work! In the same position, get the students to straighten their legs and fins and using a gentle rolling action from the hips, flex their legs slightly as they fin. Point out how this action makes for more efficient finning.
- With mask and snorkel fitted, demonstrate lying on the surface, face down, breathing through a snorkel and holding onto a buddy or suitable fixed object for support. Use a gentle roll action from the hips and flex the legs slightly for efficient finning action. Explain that this action is called a 'flutter kick', and that using it makes sure that the movement is from the whole leg.

After the static finning demonstration, show how to stand up with fins on by turning over and standing up backwards.

7. Finning action - moving

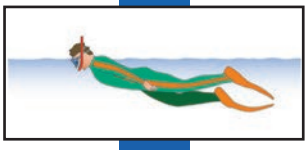


- In waist deep water, using mask and snorkel, demonstrate the following:
  - Fin forwards using a smooth 'up/down' leg action (ie flutter kick), with the arms held forward
  - Stop, use your hands as paddles to turn around and then fin back to the start point.

Remind students that as well as looking down to see what is underwater, they must also look ahead on the surface to see where they are going and avoid colliding with snorkellers and other water users.

Maintain control of the group so they do not, at this stage, fin into deeper water – this can be achieved by having them fin in a straight line with clearly defined turn around points or in a circle in front of the instructor.

8. Finning with arms in different positions



- In waist deep water, using mask and snorkel, demonstrate:
  - Finning forwards with arms held at the side of the body.
  - Finning forwards with hands placed in the small of the back.

Remind students that 'streamlining' the body as much as possible makes moving through the water much easier – think fish!

9. Exit water

Demonstrate an exit but remember the golden rule – instructor last out.

10.Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their session and highlight the areas of progress they have made. If skills have met the performance standards below, award the Dusky Dolphin sticker.

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced..

- **Correctly fitting a face mask –** clear face of hair and place mask so that it is comfortable with strap centred on back of head.
- **Correctly fitting snorkel and breathing from it with face and mask submerged –** snorkel fitted so comfortable. Bend forwards, submerge face in water, breathe from snorkel for four/five counts.
- **Finning forwards, stopping and turning around whilst breathing from a snorkel** – with good finning action move forwards whilst breathing from a snorke.
- **Finning forwards using different arm positions** – using good finning action, and using different arm positions.

Striped Dolphin

Lesson objectives

This is the third Dolphin Snorkeller lesson and its main objectives are to introduce different entry methods and to get students snorkelling confidently in a buddy pair. To maintain confidence levels these skills should not be rushed - some students will take longer than others to learn new skills, depending on their personalities, their aptitude and their previous experience.

Achievement targets

At the end of this session students should:

- Be competent and confident in fitting all equipment
- Be competent and confident entering and exiting deeper water
- Be competent and confident at finning whilst using mask and snorkel as a buddy pair.

Lesson contents

Each student's equipment, including thermal protection and buoyancy aids if used, should be prepared, and checked by the instructor, at a 'fitting' session before starting the lesson.

If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen cream, appropriate head protection.

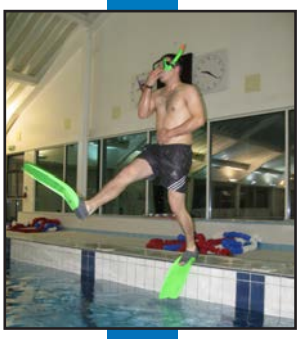
1. **Briefing**

   Explain the above objectives to the students. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief. Explain where the entry point will be so that students know where to go to prepare and fit their equipment.

2. **Preparation and fitting of equipment**

   Get the students to prepare and fit their equipment, working in buddy pairs. If necessary review and re-demonstrate any areas that are causing them problems.

3. **Stride entry into deeper water**



   - Demonstrate a stride entry. Tell the students that this simulates an entry from a large boat which they may well use in the future.
     - Stand on the side of the pool, platform or jetty facing the water with your toes just over the edge.
     - Check that your entry point into the water is clear and secure your mask and snorkel with one hand. Look straight ahead, lift one leg forwards, take a large stride out, and enter the water safely away from the edge of the pool, platform or jetty.
     - After surfacing, turn to face the entry point, blow clear your snorkel if necessary and give an 'OK' signal (unless not OK). If waiting for your buddy to enter, keep clear of the entry point.
   - Give the students clear directions when they copy the demonstration – an 'OK' signal and response, and a verbal 'go' from the instructor.

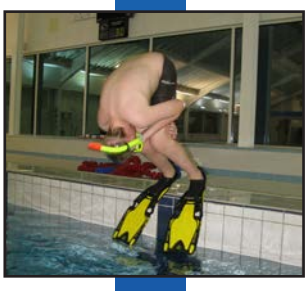
4. **Deep water exit not using ladder**

   - Demonstrate in out of depth water.
     - Place both hands on the side of the pool, platform or jetty, bounce up and down to get momentum, and on the final bounce fin hard to lift your body from the water until it is supported on the arms. Roll to one side to finish sitting up on the side of the pool, platform or jetty.

   If the poolside, platform or jetty is too high for students to fin up and support themselves on their arms, demonstrate as above but as the body lifts from the water, bend over the poolside, platform or jetty and roll/ease into a sitting position.

   Following the demonstration, re-enter the water before students mimic.

5. **Forward roll entry**



   Ensure the water depth is sufficient for the height of the students. Tell the students that in the future they will find forward roll entries useful for entering off a boat, jetty or platform while carrying a camera.

   - Demonstrate a forwards roll entry.
     - Stand on the side of the pool, platform or jetty. Face the water with fins together and toes just over the edge.

- Check that the entry point into the water is clear, bend forward and place your hands either behind your knees or across your chest (protecting the camera).
- Tuck your head in by looking down at your knees (not where you are going!) and roll forward into water.
- Complete the roll in the water to regain an upright position, clear the snorkel using the blow technique, then give an 'OK signal.

6. Deep water ladder exit

Make a deep-water exit using a ladder, if available at the location.

- Demonstrate in out of depth water.
  - Hold the ladder with one hand, then keeping your mask and snorkel in place, remove your fins and pass them up to the surface cover.
  - Climb the ladder, keeping three points of contact at all times. After reaching the top clear the exit point for others to use.
  - Instruct snorkellers waiting for their turn to remain clear of the bottom of the ladder until the climber has cleared its top, in case the climber slips and falls.

7. Slide entry (also known as silent entry)

This entry is used when the depth of water is unknown, and it is unclear whether it is deep enough for a stride or forward roll entry. If in doubt use a slide entry, as it is the fins that will find contact with anything underwater first.

- Demonstrate starting in a sitting position with mask and snorkel in place and fins in or just over the water (the suggested depth is standing depth for students):
  - Place both hands to one side of the body on the edge of the pool, platform or jetty.
  - Using the arms for support, lift and turn the body away from the water, then gently lower the whole body down into the water whilst still holding on to the pool, platform or jetty.
  - Give an 'OK' signal when the entry is complete.

8. Finning in deeper water

Allow the students time for a snorkel finning session in deeper water. Get them to work in buddy pairs, taking turns at being the 'snorkel dive leader' who sets the direction and checks their buddy with OK signals.

9. Deep water exit

Use a deep-water exit appropriate to the location, either the fin up and out technique, or a ladder exit. Remember that the instructor should be the last one out.

10 Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their session and highlight the areas of progress they have made. If skills have met the performance standards below, award the Striped Dolphin sticker.

Skills Performance Standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards in the water conditions experienced.

- **Prepare and fit equipment** – prepare and fit mask, snorkel and fins and assist buddy.
- **Deep water entries and exits** – enter water using stride, forward roll and silent entry, giving OK back to surface cover and clearing entry point for other snorkellers/buddy to enter. Exit water using deep water fin up and ladder exit .
- **Finning in deeper water** – use efficient finning technique whilst snorkelling in deeper water and work as buddy pair taking on the roles of snorkel dive leader and buddy.

Lesson objectives

This is the fifth Dolphin Snorkeller lesson. Its main objective is to introduce students to headfirst surface dives (also known as 'duck dives'). The lesson is designed to build students' confidence and competence by working on mask clearing in shallow water first before moving to deeper water for snorkel clearing and duck dives. To maintain confidence levels the skills should not be rushed - some students will take longer than others to learn new skills, depending on their personalities, their aptitude and their previous experience.

Achievement targets

At the end of this session students should:

- Be competent and confident clearing a part filled mask underwater
- Be competent and confident clearing a snorkel using the displacement technique
- Be competent and confident in carrying out a head first surface dive
- Be competent and confident working as a buddy pair on surface dives – one up, one down

Lesson contents

Each student's equipment, including thermal protection and buoyancy aids if used, should be prepared, and checked by the instructor, at a 'fitting' session before starting the lesson.

If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen cream, appropriate head protection.

1. **Briefing**

   Explain the above objectives to the students. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief. It is important to check whether students can clear their ears so that they can surface dive safely. It is also advisable to check who is wearing contact lenses, because the lesson involves mask clearing.

   The briefing should include the new signals 'down', and 'you and me', as well as 'OK' and 'up' which the students have already encountered.

2. **Preparation and fitting equipment**

   Get the students to prepare and fit their equipment, working in buddy pairs. If necessary review and re-demonstrate any areas that are causing them problems.

3. **Stride entry into deeper water**

   Buddy up the students and get them to do a buddy check and assist each other as necessary.

   - Demonstrate a stride entry. Remind the students that this simulates an entry from a large boat which they may well use in the future.
     - Stand on the side of the pool, platform or jetty facing the water with your toes just over the edge.
     - Check that your entry point into the water is clear, and secure your mask and snorkel with one hand. Look straight ahead, lift one leg forwards, take a large stride out, and enter the water safely away from the edge of the pool, platform or jetty.
     - After surfacing, turn to face the entry point, blow clear your snorkel if necessary and give an 'OK' signal (unless not OK). If waiting for your buddy to enter, keep clear of the entry point.
   - Give the students clear directions when they copy the demonstration – an 'OK' signal and response, and a verbal 'go' from the instructor.

4. **Part filled mask clearing**

   Following entry, move the students to chest deep water.

   - Demonstrate initial clear:
     - On the surface in standing depth hold the side of your mask with one hand. Tilt your head back and gently breathe out through the nose. Students should feel the mask lift slightly away from their face. Explain that this is all they need to do if they feel 'mask squeeze' underwater. The next step uses the same principle to clear the mask of any water ingress.
     - Hold a buddy or suitable fixed object for support and crouch or kneel down so your mask is submerged just below the surface but the tip of your snorkel is above water.
     - Lift the side skirt of the mask from your face to allow a small amount of water to enter.

- Hold the side of the mask with one hand. Tilt your head back, ease the mask slightly away from your face to break the seal at the bottom of the mask to allow a little water to enter, and breathe out through the nose to dispel water.
- Replace the seal and stand up.

• Demonstrate progressive flood:

- Repeat the above steps, but allow enough water to enter to half fill the mask.

The progressive sequence described above should work for all styles of mask but some details may need adapting. In particular, masks fitted with drain valves will require the head to be tilted slightly forward rather than back.

5. Recap snorkel clearing using blow method - static

• Demonstrate the blow method of snorkel clearing:

- Start in just deeper than standing depth water.
- Lie on the surface and tilt the body from the waist so that your head is underwater and the snorkel fills.
- Surface, tip your head back slightly, exhale forcibly to expel water from the snorkel, and then continue breathing through it.

The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves usually require less effort to clear, but using this technique will help students should their drain valve be ineffective.

6. Snorkel clearing using displacement technique

• Demonstrate displacement clearing :

- Drop down below surface so the snorkel is submerged. Look up at the surface, tilt your head back so that the snorkel tip is lower than the mouthpiece and gently blow to clear the water from it before standing up.

When displacement clearing, snorkels fitted with drain valves will clear via the drain valve rather than the tube, but tilting the head back still helps with water displacement and looking up before surfacing is a safety action students will use on surface dives.

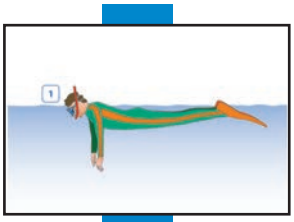
7. Head first surface dive

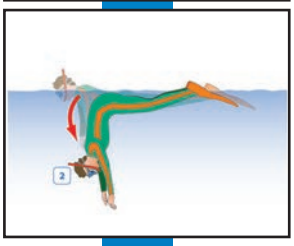
Check that students can clear their ears and can breathe out through their noses for mask equalization. Remind them to breathe normally and not to take more than three breaths before diving. Emphasise the importance of the 'one up, one down' principle.

Work just out of student's standing depth so they can dive safely. It is a good idea to place or locate something on the bottom that students can use as a target when diving.

Explain that any air in snorkelling buoyancy jackets will need to be released prior to diving otherwise students will be wasting energy fighting to get down.

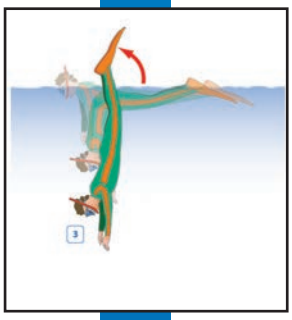
- Demonstrate the initial diving preparation position:
  - Lie on the surface face down with your body stretched out.
  - Take your arms and hands down so they form a 90° angle to the body and point to the target on the bottom of the pool/seabed.
  - Bend downwards from the waist so that the upper body and arms form a 90° angle to the legs.
  - Surface and blow clear your snorkel.
  - Repeat the demonstration so that students become familiar with this initial position.





- Demonstrate diving position/handstand/ear and mask equalisation and surfacing procedure:
  - Fin forwards gently until the target is slightly ahead of you (rather then directly underneath), then repeat as above but when the upper body and arms are at a 90° angle to the legs use the momentum of bending at the waist to lift your legs and fins straight up and out of the water. Then drop down to almost a handstand on the target. Pinch your nose to indicate ear clearing.

    Help students achieve the correct leg and fin position by getting them to imagine a whale's tail fluke as it sinks below the surface, sleek and with no splashing.



  - Gently fin forwards out of the 'almost handstand' and demonstrate ear clearing again by pinching your nose. Then hold one arm above your head ('Superman position') and look up to ensure it is clear to surface (which will ensure that the head is tipped back in the right position for displacement clearing. If there is enough depth, turn 180° on the ascent whilst looking at the surface.
  - Surface and give an OK signal.

When the students are practising this exercise, remember to let them get their breath back between dives.

8. Students free snorkelling session with surface dives

Allow the students time for a snorkel finning session using duck dives. Get them to work in buddy pairs, agreeing who is diving and who is acting as surface cover each time using the 'one up, one down' principle.

9. Deep water exit

Use a deep-water exit appropriate to the location, either the fin up and out technique, or a ladder exit. Remember that the instructor should be the last one out.

10 Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their session, and highlight the areas of progress they have made. If skills have met the performance standards below, award the Clymene Dolphin sticker.

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Clear a part-filled mask on the surface –** allow a little water into mask, place hand on mask, tip head back, use hand to ease mask seal to allow water to drain away, allow mask to reseal to face.
- **Clear a part filled mask underwater –** just below surface allow a little water into mask, place hand on mask, tip head back, breathe out through nose and, at same time, use hand to ease mask seal, when water dispelled allow mask to reseal to face.
- **Clear a snorkel using 'displacement' technique** - drop down below surface so snorkel is submerged, look up at surface, tilt head back so snorkel end is lower than mouthpiece and gently blow to clear water before standing up.
- **Head first surface dive** – in buddy pair, one up one down, bend 90° at waist, legs and fins lifted into handstand position, fin out from handstand position on bottom, surface using superman position, displacement clear of snorkel, OK at surface to buddy.

Lesson objectives

This is the sixth Dolphin Snorkeller lesson. The main objective is to equip students with a variety of finning techniques and an understanding of which circumstances may dictate a particular technique. Introducing side and backwards finning together with front crawl finning is also a preparation for rescue work later in the lesson. Wearing mask and snorkel is assumed unless otherwise indicated.

Achievement targets

At the end of this session students should:

- Be confident and competent finning backwards, turning around and finning back to the start point as a buddy pair
- Be confident and competent finning sideways, turning around and finning back to the start point as a buddy pair
- Be confident and competent finning forwards using a crawl stroke with the arms
- Be aware of other finning techniques and underwater movement:
    - ‘In and out’ slow finning
    - Dolphin kick
- Be confident doing a feet first surface dive
- Understand how to relieve cramp
- Understand how to rescue and tow a tired buddy to safety.

Lesson contents

Each student's equipment, including thermal protection and buoyancy aids if used, should be prepared, and checked by the instructor, at a 'fitting' session before starting the lesson.

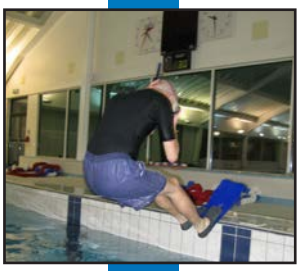
If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen cream, appropriate head protection.

1. Briefing

Explain that this lesson is going to introduce different finning techniques and explain when snorkellers might use them. Cover all elements of a SEEDS brief. This lesson involves surface dives so remember to check that students can clear their ears.

2. Backwards roll entry

Demonstrate a backwards roll entry. Explain that the crouch position simulates an entry from a small boat such as an inflatable or RIB, where you would be sitting on the tubes or gunwale.

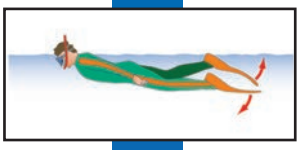


- Stand at the edge of the pool, platform or jetty facing away from the water after checking that the entry point is clear.
- Hold the mask and snorkel to your face with one hand, with your other hand on the mask strap at the back of your head.
- Bend the knees so that the body is in a crouching position, then roll backwards into the water.
- On regaining the surface clear your snorkel and give an 'OK' signal.

When students repeat the exercise, ensure that they have support when in the crouch position and that they wait for a clear 'go' before entry. Explain that on a boat ,the 'go' signal would be given by the skipper or coxn because only they can see whether it is safe for entry, not the snorkeller.

3. Finning techniques

- Forward flutter kick – different speeds
  - Demonstrate, with your hands held together behind the back and keeping a good look out on the surface to avoid collisions with others. Fin forwards at various speeds from slow to fast.

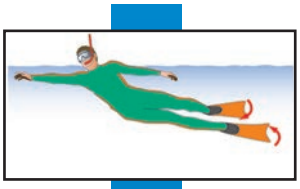


- Finning using crawl stroke for arms
  - Demonstrate how to increase speed when forward finning by using the arms in an over arm crawl stroke. Remind students that increasing speed also requires keeping a careful lookout to avoid collisions.
  - Get the students to repeat.
- Backwards flutter kick

  Explain that this kick enables snorkellers to fin face up rather than face down.
  - Demonstrate by lying back on the surface, either removing your snorkel or keeping your head forwards so the snorkel does not submerge. Begin to fin backwards, turning every so often to check for obstructions.

When the students repeat, put them into buddy pairs so that they work together.

- Sideways flutter kick

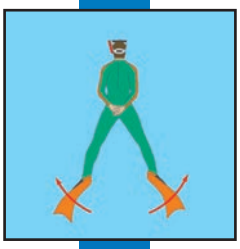


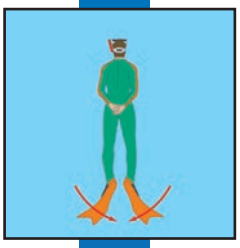
Explain to students that this is a good technique to use when going over corals or shallow underwater features, because it disturbs the water less than the 'up and down' flutter kick and reduces the risk of fins touching or disturbing marine life. The finning action is the same as with forwards and backwards finning but because the body is sideways on, the finning action is sideways on as well!

  - Demonstrate by lying on the surface on one side, either removing your snorkel or keeping your head up so the snorkel does not submerge. Stretch one arm out in the direction of travel and start to fin, looking ahead and checking for obstructions.

Get the students to repeat the exercise working in buddy pairs and facing each other.

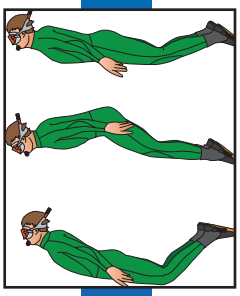
4. Other finning techniques and underwater movement





Explain that there are times when snorkellers need to remain stationary or move very slowly, such as when hovering over a point of interest or following a marine creature without disturbing it and scaring it away.

- Demonstrate the 'in and out' slow finning method
  - Lie on the surface keeping the legs straight.
  - The first fin stroke: push the legs and fins outwards, away from each other.
  - The second fin stroke: with another push against the water, bring the legs and fins back together again.
  - Repeat the sequence to show how the 'in and out' fin technique will move a snorkeller gently forwards.
- Dolphin kick



This kick can be used either on the surface or underwater. The snorkeller uses a 'waving' motion of the whole to propel themselves forward through the water.

Demonstrate

  - Lie on the surface with yours arms by your sides and legs and fins together.
  - To begin the body 'wave' which will start to move you forwards, keep the legs and fins together, dip your head down, lift your hips upward, and your legs and fins will follow. Then lift your head up and push your hips downward, and again your legs and fins will follow. Once the wave motion gets going ,you will be able to assist the movement with your fins moving up and down, held tightly together to form a single 'fin'.

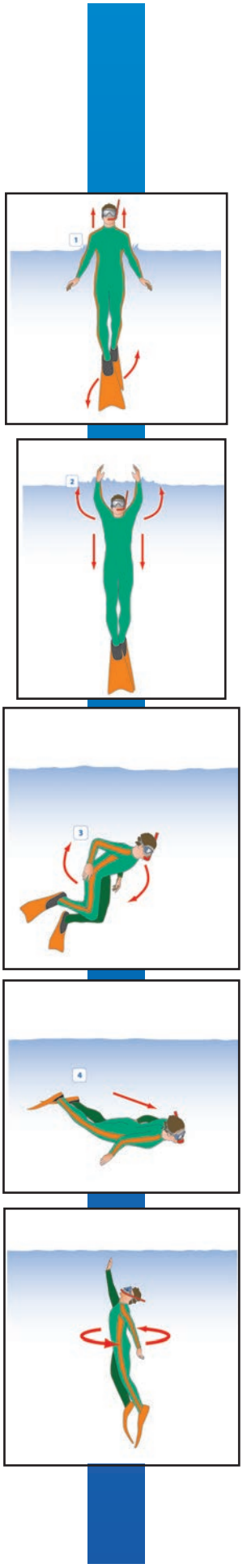
5. Feet first surface dives in deeper water – optional

This skill may be omitted if the water available is not deep enough.

Although the head first dive is the usual method of diving, the feet first dive can be useful in poor visibility because the fins will be the first thing to hit any unseen underwater obstruction, rather than your head.

- Initial position:
  - Demonstrate how to begin this dive by starting from an upright, vertical floating position.
  - Fin gently to maintain the upright position and extend your arms to either side of your body. Start to fin forcefully so that your body lifts upwards out of the water. Stop finning and allow your body to fall back to the starting position.
  - Repeat a couple of times.
- Dive position:
  - Repeat the above but when the body lifts out of the water, put your arms above your head, stop finning, and bring the legs together with fins pointing down. Your whole body will sink and drop below the surface, like a missile.
  - Once under water, hold your body position but sweep your arms sideways and upwards, using your hands to force the body further down.
  - Tuck the body and then extend it and fin forwards or further down. Demonstrate equalization by pinching your nose.
  - Ascend in the 'Superman' position and clear the snorkel using the displacement technique. If there is enough depth turn 180° on ascent.
  - Surface and give an 'OK' signal.

  When the students repeat, remember to let them regain breath control before attempting subsequent dives.



6. Snorkel swim in buddy pairs

Allow students a 'free snorkelling' session in their buddy pairs. Urge them to keep their snorkels in their mouths and use signals rather than talking. Tell them to constantly monitor their surroundings to prevent collisions with other buddy pairs.

With younger students this session can be turned into a game, with the instructor calling out which fin stroke to use (like Simon says!).

7. Buddy rescue

- Action for cramp

  Demonstrate the action for in water cramp:.

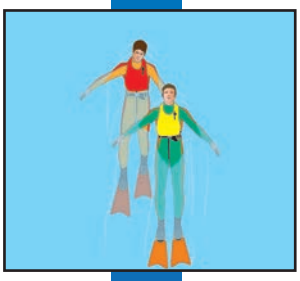
  Tell the casualty to relax and lie on his/her back. If the casualty has sufficient buoyancy (or buoyancy can be increased using a snorkel vest) the rescuer takes hold of the affected leg by the fin and gently pushes the fin back towards the casualty so that the calf is stretched. If the casualty cannot maintain comfortable buoyancy, tow to a point of support or ask for in-water assistance before trying to relieve the cramp.

- Rescue

  Using a volunteer 'casualty', set up a scenario where the buddy fins some distance away (about 10m), gets very tired and gives a distress signal.

  Demonstrate the rescue:.

  - Acknowledge the signal and tell the casualty to stay calm and that you are on way. Fin towards the casualty as quickly as you can using an over arm 'crawl' stroke, keeping the casualty in view all the time.
  - On reaching the casualty make a firm contact and tell them to stay calm and relax by lying back on the surface.
  - When casualty is in position (if they are wearing a snorkel vest add some air for additional buoyancy) maintain a firm grip and tow them to nearest point of safety (shore, jetty, pier, poolside or boat).
  - Once the point of safety has been reached, maintain a firm grip on the casualty and ask for assistance so that, under your guidance, the casualty can be removed from the water.



The method of towing depends on what the 'casualty' is wearing. A snorkel vest can be held at the back and a long arm tow used whilst finning backward. If the casualty is wearing a thin suit or t-shirt, the hold could be under one arm whilst finning backwards or sideways.

After the students have repeated rescue, ask them what could have avoided the need for this rescue in the first place. The obvious answer is that the buddy pair was too far apart in the first place – staying together as a buddy pair means that if one gets into trouble, rescue is much nearer to hand.

8. Deep water exit

Use a deep-water exit appropriate to the location, either the fin up and out technique, or a ladder exit. Remember that the instructor should be the last one out.

9. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their session and highlight the areas of progress they have made. If skills have met the performance standards below, award the River Dolphin sticker.

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:.

- **Fin forwards face down breathing from snorkel** – using efficient forward finning stroke to move on set course, turn and return to start point, working as part of a buddy pair.
- **Fin backwards, turn around and return to start point** – using efficient backward finning stroke to move on set course, turn and return to start point. Snorkel clear of water, check made on direction heading, working as part of buddy pair.
- **Fin sideways** – using efficient sideways finning stroke to move on set course, turn and return to start point. Snorkel clear of water, one arm pointing in direction of travel, check made on direction heading, working as part of buddy pair.
- **Fin forwards using a crawl stroke with the arms** – using efficient forward finning stroke and crawl stroke with arms, move on set course, turn and return to start point. Check made every so often on direction, working as part of buddy pair.

Lesson objectives

The seventh and final Dolphin Snorkeller lesson covers snorkelling in a buddy pair and buddy rescue. The main objectives of this lesson are to assess students' skills in agreeing a snorkel dive plan, for each buddy to lead a dive and to assess each student in rescuing a conscious buddy and towing them to a point of safety.

Achievement targets

At the end of this session students should:

- Be competent and confident snorkelling with another Dolphin Snorkeller
- Be confident and competent towing a conscious buddy to safety

Lesson contents

Equipment should be prepared/checked by the instructor with the students prior to the commencement of the lesson. If running the lesson where sun protection is necessary, ensure students have suitable protection, egs t-shirt, suncream, head protection.

Briefing

Cover all elements of a SEEDS in the instructor brief and, as surface dives are probably going to be planned, check students can clear their ears as they will be experiencing pressure on the ears and mask.

Explain that this lesson is going to give each student the opportunity to plan and lead a short snorkel dive. Give a time allowance for each dive, from a brief to debrief. Before the Kit Up and Buddy Check stage, students must ensure they check in with the surface cover and confirm their time of exit from the water.

Skills Performance Standards

For the snorkel dive, students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced, whilst acting as snorkel dive leader:

1. **Snorkel Dive**
    - **Plan and brief**

      Within the constraints of time, depth and location set by the instructor, students establish a snorkel dive plan and confirm this in their brief using SEEDS
    - **Kit ip & buddy check**

      Students should assist their buddy to kit up and then conduct a buddy check
    - **Entry**

      Students should choose an entry suitable for the depth of water, leader in first
    - **Snorkelling and dives**

      Students should monitor buddy, show awareness of other water users, follow 'one up one down' when surface diving
    - **Exit**

      Students should choose an exit suitable for depth of water, leader out last
    - **Debrief**

      Students should review the dive, anything to improve
2. **Skills performance standards for distance rescue of conscious buddy and tow to point of safety**

    The instructor should set a scenario whereby one member of a buddy pair has become exhausted and cannot fin and has stopped some distance from the other. Start the rescue where a little distance (10m) needs to be covered to reach casualty and where it will involve a tow to point of safety:

    - Acknowledge signal, casualty told 'rescuer on way' and to 'stay calm'. Finning towards casualty done as quickly as possible using overarm 'crawl' stroke but keeping casualty in view all the time.
    - On reaching casualty, firm contact made, repeat 'stay calm', casualty told to relax and lie back on surface.
    - When casualty is in position, a firm grip is made and maintained during tow to nearest point of safety (shore, jetty, pier, poolside or boat).

- Once the point of safety has been reached, firm grip maintained on casualty, assistance requested and under rescuer guidance, casualty is removed from the water

Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their last session and highlight the areas of progress they have made.

On completion of the snorkel dive and buddy rescue, the Risso's Dolphin sticker can be awarded. Since the students have gained the final sticker in the seven Dolphin series, they are now BSAC Dolphin Snorkellers

Finally, remind students when they go snorkelling in the future: -

- To stay shallow – they are beginners.
- To always have surface cover, someone watching them when they are snorkelling, and to make sure they can always see that person so that if assistance is needed it can be provided quickly.
- Not to touch marine life or damage coral or reefs with hands or fins
- If snorkelling in hotter climes, to remember body protection to prevent sunburn - t-shirt, hat, suncream and head protection..

Advise students that if they wish to progress their snorkelling skills, they can continue training through a BSAC branch or centre.

Snorkel Diver Course

Course outline, definitions and guidance for instructors

This section outlines the Snorkel Diver Course and provides guidance and definitions specific to the Snorkel Diver grade. Much of this information is common to many of the lessons and hence is consolidated here, rather than repeated in each lesson.

Definition of a Snorkel Diver

A Snorkel Diver is defined as a diver who is competent to conduct dives:

- with a Dolphin Snorkeller (within the conditions experienced by the lesser qualified during their training) or another Snorkel Diver, Advanced Snorkeller or Snorkel Dive Manager within the restrictions of the similar conditions already encountered during their training.
- with an Advanced Snorkeller or Snorkel Dive Manager to expand their experience beyond the conditions encountered during their training, under the supervision of a Snorkel Dive Manager.
- to a depth which is initially limited to the maximum experienced during training, but which can subsequently be extended progressively, under the supervision of a Nationally Qualified Instructor (NQI).
- under the on-site supervision of a Snorkel Dive Manager or designated responsible adult with respect to site selection, conditions and dive plan.
- where other divers or responsible adults, capable of providing assistance and rescue, are available at the surface.
- within BSAC safe diving practice recommendations.

Snorkel Diver course outline

The Snorkel Diver Course consists of the following elements:

- Four theory sessions
- A theory assessment
- A basic in-water confidence assessment
- Five sheltered water lessons

All practical training in sheltered water requires the achievement of specific performance standards at appropriate points throughout the lessons.

Instructor requirements

Snorkel Diver training is required to be carried out by, or supervised by, an NQI who holds a minimum qualification of Snorkel Instructor.

Student/Instructor ratios

For practical lessons, student/instructor ratios should comply with the following guidelines.

Sheltered water lessons – The lesson notes envisage lessons being carried out either in a swimming pool or in pool-like sheltered open water conditions. The lessons assume a one hour duration and in order that all students can receive effective tuition during this time, a maximum ratio of six students per instructor is assumed. However this ratio may need to be reduced or supported by another instructor, depending on the water conditions, the time available and age of the students. If necessary, depending on the in-water time available or type of student, the lessons can be split over further sessions.

Definitions

The following terms are used throughout this section of the instructor notes.

Sheltered water – a well-maintained swimming pool, or water which provides similar conditions, ie is generally less than 4m deep, with a stepped or gently shelving open bottom of firm composition, has adequate visibility (minimum 5m), and is free from significant water movement from either waves or currents. Within sheltered water, depths are defined as follows:

- **standing depth** – water that is between waist and chest deep allowing students to either stand comfortably, or to kneel and be fully submerged
- **deeper water** – water that is from approximately 2m to 4m in depth

Lesson sequencing

Theory sessions are structured to provide pre-requisite knowledge appropriate to different elements of the sheltered water lessons. To ensure that pre-requisite knowledge is covered prior to the corresponding practical elements, theory sessions and sheltered water lessons should be run in an

integrated sequence as follows:

Theory Sessions 1 and 2

Sheltered Water Lesson 1

Theory Session 3

Sheltered Water Lesson 2 and 3

Theory Session 4

Sheltered Water Lessons 4 and 5

Theory sessions

The theory lessons in this course are built around PowerPoint presentations which can be adapted to include any relevant information; eg in the first theory session introducing students to BSAC and your particular branch/centre, relevant information can be inserted. The PowerPoint presentations provided can also be used as a basis to produce alternative visual aids (VAs), such as whiteboards, flipchart or flashcards. The type of visual aids needs to be carefully considered for particular age groups, and ***Instructor notes*** have been inserted in the theory lesson notes giving ideas of alternative visual aids for children

Sheltered water lessons

Lessons are structured very much on the 'less haste more speed' principle. Instructors should take care to view all aspects from the student's point of view, as their perceptions will be very different to those of the snorkel divers.

The lessons concentrate on the students acquiring basic skills, such as finning etc., to a level where they become second nature and students become relaxed in water and able to develop confidence in their own abilities. This builds a firm foundation on which other snorkelling skills, such as using search and recovery techniques, can be overlaid in training. Failing to achieve this firm foundation at this stage will only make the acquisition of these later skills more difficult and protracted.

A further important aspect of this foundation is developing the 'buddy' concept from the outset. Instructors should underline this role by teaching the benefits of buddy assistance while kitting up/de-kitting, the importance of the buddy check prior to **every** snorkel dive and monitoring the buddy while in water particularly when surfacing diving and using the one up, one down principle. This emphasis should take place right from the earliest Sheltered Water lesson.

The structure of the lessons is based on the demo/mimic/assess principle. Instructors should not rely on the students remembering what every exercise is that they are going to do from the briefing. Demonstrating every exercise will ensure that the students understand what is expected of them at each point in the lesson.

A number of repeat exercises are included for consolidation of certain skills. It is important that these are carried out so that the skills become second nature to the students and require less mental effort.

If necessary, a transition from sheltered water lessons conducted in a swimming pool to lessons conducted in sheltered open water conditions can be eased by including an extra session to give students familiarity with wearing protective clothing, and to enable an initial assessment of any weighting needed (see Buoyancy Check at the end of this manual). In warm pool water however, students should be carefully monitored to avoid them overheating when wearing thermal protection.

Adapting lessons for differing conditions

The sheltered water lesson contents have been based on the most common conditions of a swimming pool containing warm water or in a warm climate with sheltered water sea conditions. Snorkel Divers do, however, learn to dive under a variety of sheltered water conditions, which require different standards of protective clothing. Although the wearing of gloves will affect students' dexterity, and hoods affect the ease with which masks can be sealed and cleared, the impact of these issues will generally be one of increased time required.

Performance assessment and standards

Snorkel Diver training includes a number of assessments covering basic swimming competency, in water comfort, practical snorkel diving skills and underpinning knowledge.

In-water confidence assessment

A basic level of comfort in the water is essential for qualified snorkel divers. This is evaluated during a swimming assessment, which comprises a 50m freestyle swim. Students should complete this assessment comfortably, with reasonable ease; speed is not one of the relevant criteria. However, it should be recognized that some students will benefit from snorkel training to increase their in-water confidence or swimming practice in parallel

with their sheltered water lessons. The swimming assessment must be satisfactorily completed before granting the Snorkel Diver qualification

Practical assessments

By the end of the Snorkel Diver course, students should be able to perform the key skills reliably and repeatedly. Sufficient repetition is therefore built into the syllabus to enable this to be achieved. This is an important element in developing the student's confidence in their own abilities to snorkel dive with another snorkel diver, independent of an instructor.

Different skills are however learned at different points during the training, some of which are pre-requisites for further skills to be learned later. For this reason the practical assessments are spread individually throughout Sheltered Water training, rather than grouped together at the end of the course. The last lesson is an assessment of students' snorkelling as buddy pairs and a rescue of an incapacitated buddy.

Because these assessments of key skills require that students are not only able to perform the skill satisfactorily, but also demonstrate an appropriate level of confidence in doing so, they are identified in the relevant lesson objectives and notes with the use of the definition **competent and confident.** Where these words appear, students should have progressed sufficiently to be able to achieve the relevant performance standards without supervision, as applicable to the water conditions appropriate to that lesson. These performance standards are incorporated at the end of the relevant lesson's notes.

Theory assessment

The theory assessment can be undertaken any time after the completion of the theory sessions but must be completed before granting of the Snorkel Diver qualification. The manner of the assessment depends on the age and capability of the student; a quiz type of assessment can test a younger student whereas older students can do a multi choice paper, and students with special needs may prefer a quiz or verbal reading of a multi choice paper. A pass mark of 80 % must be achieved.

Alternatives to the conventional written theory test for Snorkel Diver are especially appropriate when training children. One method to consider is a fun quiz technique based on either the quiz questions at the back of the Go Snorkelling manual, or questions from one the multiple choice question papers. The instructor gives a set of answer cards to each student so they can select a card to show in response to a question. The cards might be different colours, or labelled a, b, c, d, or different shapes (egs, fish, dolphin, octopus, lobster). The instructor asks a question and the students hold up the card which corresponds to the answer. For example, the instructor might hold up a piece of equipment and say "if you think this is a snorkel hold up the blue card" (or card a, or 'the dolphin', etc), "if you think this is a mask hold up the white card", and so on. The instructor should take the opportunity to make any corrections to wrong answers during the quiz, as well as making a note of each student's answer and working out the overall scores at the end of the quiz.

Our BSAC Branch and Snorkel Training

Lesson objectives

An introduction to students about to undertake Snorkel Diver Training in a BSAC Branch.

There are two sets of visual aid presentations and instructor notes for this lesson: this one for BSAC branches and another for BSAC centres.

***Instructor note**: When training children, it is a good idea to invite parents or guardians to this presentation so they too understand about the branch and BSAC.*

Achievement targets

At the end of this session students should:

- Have been introduced to the structure of your branch and BSAC
- Understand the benefits of BSAC membership
- Understand the benefits of training and snorkelling with the branch and the cost implications
- Understand the Aams of the Snorkel Diver course
- Understand the ongoing progression after qualifying as a Snorkel Diver

***Instructor Note:** the following items will be useful as additional Visual Aids:*

Snorkel Diver manual, Qualification Record Book, copy of BSAC magazine.

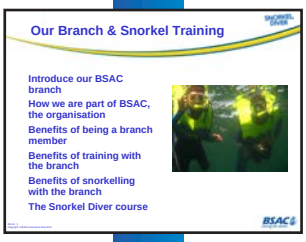
Aims

This is a welcome and introduction to your branch and BSAC, and a description of the support you give to training and snorkelling. The last section provides an introduction to the Snorkel Diver training course.

Our BSAC branch & snorkel training

Begin by explaining that your branch is one of many that form BSAC, the largest diving club in the world. If a student has to move from your branch because of work or personal reasons there is always the opportunity to join another BSAC branch and continue snorkelling and training. There are also BSAC diving centres and branches around the world that welcome BSAC members for snorkelling.

Introduce the key members of the branch that the students will work with.:



Benefits of BSAC membership

This list is what the new member will initially receive, but there are other benefits you can mention such as special 'BSAC member rates' with various companies through the BSAC Plus scheme and saving money on holidays with the BSAC Travel Partners. BSAC Plus enables members to save money in their daily lives on items such as high street shopping, insurance, utilities, and home and lifestyle purchases.

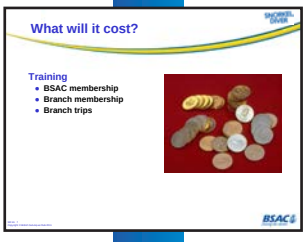
Instructor Note: *commercial arrangements change from time to time so check the BSAC website for the latest details of discounts available.*

Benefits of training with the branch

Remember that the students are new to the branch and may not be aware of all its benefits. Explain your branch's activities to support them through their initial and ongoing training and snorkelling. Where a branch has its own equipment, arrange a tour of your facilities. If your branch does not have equipment, explain how you operate, ie where kit can be purchased or borrowed etc.

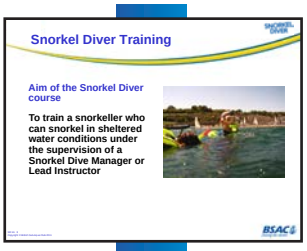
What will it cost?

Having outlined the branch's activities, remind students (parents or guardians) of the costs involved to allow them to plan ahead financially as a snorkeller with your branch.



Snorkel Diver Training

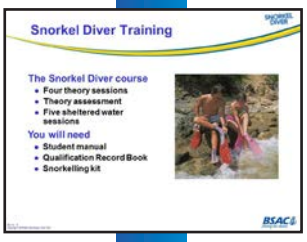
Explain the aim of the Snorkel Diver course



Snorkel Diver training

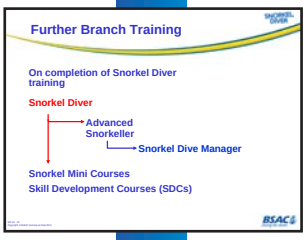
As with all BSAC training, the course is designed to progressively build the student's skill and confidence base as safely as possible:

- Explain that the format of the course comprises a combination of theory sessions and sheltered water lessons. It is important to outline the branch 'domestics' such as when and where students are expexted for the training sessions and the kit arranagements that your branch utilises for training sessions.
- It should be emphasised that commitment to the Snorkel Diver training programme is important to enable it to run smoothly for other students and particularly the instructors.
- Another important element of the course is self-study using the Snorkel Diver Course Manual provided in the 'Training Pack'



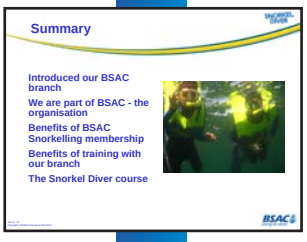
Further branch training

Once students have qualified as Snorkel Divers they can progress with further training within the Branch – the next level being Advanced Snorkel Diver. As Snorkel Divers they can also attend Mini Snorkel Courses run by the branch and also attend specialist Skill Development Courses such as Boat Handling etc. The progression from Snorkel Diver to Snorkel Dive Manager is shown, in outline, so that students can recognise the names of BSAC snorkelling qualifications and see a development path beyond Snorkel Diver. The specifics of each level do not need to be mentioned at this time.



Summary

This lesson has welcomed and introduced students (parents or guardians) to the branch and outlned the benefits of training and snorkelling with BSAC.



Introduction to our BSAC Centre and Snorkel Diver Training

Objectives

An introduction to students about to undertake Snorkel Diver training in a BSAC centre.

Instructor note: *When training children or vulnerable adults, it is a good idea to invite parents or guardians to this presentation so they too understand about the centre and BSAC.*

Achievement targets

At the end of this session students should:

- Have been introduced to the structure of your centre and BSAC.
- Understand the benefits of BSAC trial membership.
- Understand the benefits of training and snorkelling with the centre and the cost implication.
- Understand the aims of the Snorkel Diver course.
- Understand the ongoing progression after qualifying as a Snorkel Diver .

Instructor Note: the f*ollowing items will be useful as additional Visual Aids:*

Snorkel Diver manual, Qualification Record Book, copy of BSAC Magazine

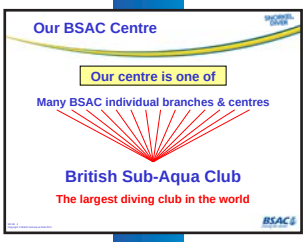
Aims

This is a welcome and introduction to your centre, BSAC and the support you give to training and snorkelling. The last section provides an introduction to the Snorkel Diver training scheme.

Introduction to our BSAC centre and Snorkel Diver training

Begin by explaining that your centre is one of many that form BSAC, the largest diving club in the world. If a student is visiting or has to move from your centre because of work or personal reasons, there is always the opportunity to join another BSAC centre and continue snorkelling and training. There are also BSAC centres and branches around the world that welcome BSAC members for snorkelling.

Introduce the key members of the centre that the students will work with.



Benefits of BSAC membership

This list includes the benefits of the trial membership of BSAC granted on certification to trainees at Snorkelling Centres. They include holiday discounts with the BSAC Travel Partners and access to BSAC's discounts and benefits scheme called BSAC Plus. BSAC Plus enables members to save money in their daily lives on items such as high street shopping, insurance, utilities, and home and lifestyle purchases.

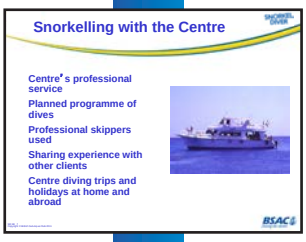
Instructor Note: *commercial arrangements change from time to time so check the BSAC website for the latest details of discounts available.*

Training with a BSAC centre

Explain your centre's activities to suport them through their initial and ongoing training and snorkelling.

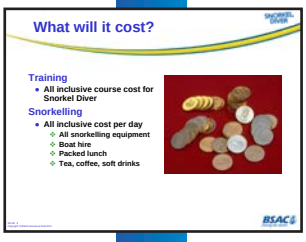
Snorkelling with the centre

As an extension to the previous VA, training is not the only activity in the centre, we all train to go snorkelling for fun and increase our experience so outline to students how the centre does this.



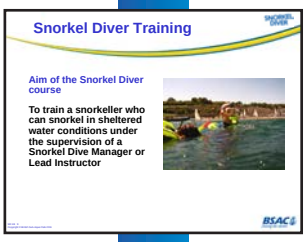
What will it cost?

Having outlined the Centre's activities, remind students (parents or guardians) of the costs involved to allow them to plan ahead financially as a snorkeller with your Centre.



Snorkel Diver Training

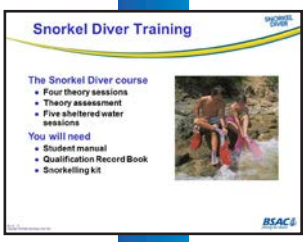
Explain the aim of the Snorkel Diver course.



Snorkel Diver Training

As with all training in the BSAC, the course is designed to progressively build the student's skill and confidence base as safely as possible:

- Explain that the format of the course comprises a combination of theory sessions and sheltered water lessons. It is important to outline the Centre 'domestics' such as when and where students are expected for the training sessions and the kit arranagements that you use for training sessions.
- It should be emphasised that commitment to the Snorkel Diver training programme is important to enable it to run smoothly for other students and particularly the instructors
- Another important element of the course is self-study using the Snorkel Diver Course Manual provided in the Training Pack

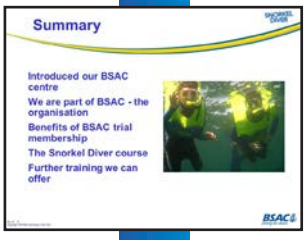


Further Training

Once students have qualified as Snorkel Divers they can progress with further training within the Centre – the next level being Advanced Snorkel Diver. As Snorkel Divers they can also attend Mini Snorkle Courses run by the Centre and also attend specialist Skill Development Courses such as Boat Handling etc. The progression from Snorkel Diver to Snorkel Dive Manager is shown, in outline, so that students can recognise names of BSAC snorkelling qualifications and see a development path beyond Snorkel Diver. The specifics of each level do not need to be mentioned at this time.

Summary

This lesson has welcomed and introduced students (parents or guardians) to the Centre and outlned the benefits of training and snorkelling with the BSAC.



Snorkelling Equipment & Signals

Lesson objectives

An introduction to snorkelling equipment and snorkel diving signals.

Achievement targets

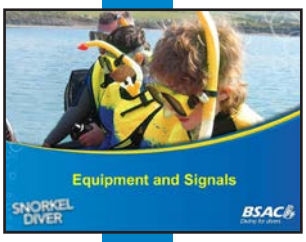
At the end of this session students should:

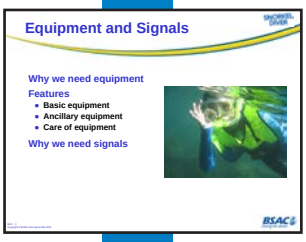
- Understand the purpose and function of basic equipment
- Understand the purpose and function of ancillary equipment
- Understand the need for snorkel diving signals

Instructor Note: *This lesson can be taught using a 'hands on' session with the equipment and using signals – to check the students have understood the key points, use a fun quiz technique to check transfer of knowledge*

Aims

Explain that students need to have some understanding of the snorkelling environment – water - and its effect on snorkellers and why the equipment is designed with this in mind. There will be times using snorkelling equipment when we cannot talk so snorkellers need a simple method of communication - signals.





Basic equipment – mask, snorkel and fins

To move easily through the water and see what is below us from the surface or to dive down to have a closer look, we need basic snorkelling equipment – mask, snorkel and fins.

We need a mask

Snorkellers need a mask to see underwater. The eye is designed to work in air not water – open your eyes underwater and everything is blurred. We need air to focus and the mask provides a pocket of air to look through.

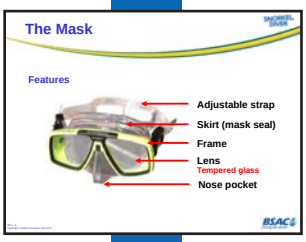
Also, when looking at something underwater it will appear a lot bigger than it actually is because light bends (is refracted) between water and air.

Instructor Note: *this bending (refraction) can be demonstrated using a snorkel, pencil, or stick: placed in the water to about half of its length, it will look as though it is bending.*

The mask

Masks come in a variety of sizes, colours and designs. It is important that the mask fits your face comfortably. Features to look for are:

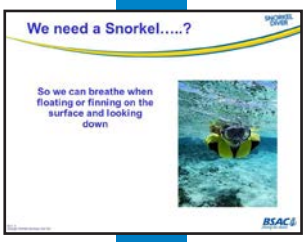
- A mask frame should be rigid to hold the glass.
- For safety reasons the glass or mask lens must be tempered glass. Rather like car windscreens, if it breaks it will "pebble" rather than "shard". For snorkellers who wear glasses, masks with prescription lenses are available although they do cost more than ordinary masks.
- The mask should have a flexible seal or 'skirt' that moulds easily to the face. Most seals are made of silicone rubber.
- The mask skirt must enclose the nose. As you will learn a little later, a volume of air, such as that inside the mask, will be compressed by the water pressure on a snorkel dive. This can 'squeeze' the mask onto the face and become uncomfortable but is easily resolved by breathing a little more air into the mask and 'equalizing' the pressure. The seal inside the mask skirt under the nose pocket is designed so that if water enters the mask, generally seeping in because stray hairs have broken the seal, breathing out through the nose will displace the water from the mask, something you will learn on practical



sessions. Some masks include a self-drain valve in the bottom of the nose pocket which helps in draining water from the mask

- To hold the mask onto the head, it should be fitted with an adjustable strap

We need a snorkel



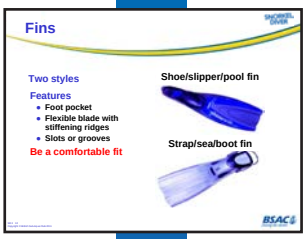
Wearing a mask means snorkellers can see what is below them when lying or finning on the surface, but they would need to keep lifting their head up to breathe. The snorkel is a simple breathing tube to allow a snorkeller to breathe whilst face down on the surface observing the underwater scenery.

As with masks, a snorkel may come in a variety of sizes, colours and designs:

- It comprises two main parts – a mouthpiece which is gripped by the teeth (rather like a gum shield) and a rigid or semi-rigid open-topped tube. This allows the snorkeller to inhale air without having to lift the head and gives a comfortable breathe even in a choppy sea.
- It usually forms a 'J' shape to fit close to the head. The length of a snorkel is around 40-45cm and the bore of the tube about 20mm. Anything narrower or longer will require too much effort to breathe. If the tube is too wide, it will be more difficult to blow clear of water following a dive.
- There are various design features, typically a self-drain valve at the bottom of the snorkel, that assist in clearing water from the tube following a dive.
- Snorkels can be held in place by wearing them under the mask strap or connected to the strap with a small attachment.

We need fins

As a liquid, water's resistance to body movement is considerable. Using a 'paddle' as an extension of the snorkeller's foot provides a higher surface area to move the snorkeller more easily and powerfully on the surface and underwater and with less effort. Fins come in a variety of shapes and sizes. The consideration before buying a set of fins is that the style of fin suits the type of snorkelling being undertaken.



- There are two basic styles, the shoe fin (also known as pool or slipper fin) and the strap fin (also known as sea or boot fin). The shoe fin has a foot 'shoe' pocket and is generally used in warmer water conditions. The strap fin has a foot pocket designed to go over boots and an adjustable strap around the heel of the boot to hold the fin in place.
- The basic design of a fin blade should include stiffening ridges to maintain the shape of the blade, the blade itself graduating in stiffness to allow some flexibility as the legs move with the finning action. Too rigid, too flexible or overlong fins will increase strain on the legs.
- Most fins include slots, grooves or shaped blades that assist the finning action.
- The most important consideration is that the fin is the right size – foot size for shoe fins and boot size for strap fins. If fins are too big or too small it will generally result in cramp.

Basic equipment care

Cleaning mask, snorkel and fins is quite easy:

- Wash in fresh water after each dive and check and remove any sand, grit or weed
- Allow to air dry out of the sun. Drying out of direct sunlight is important as sunlight can affect the flexibility of silicone rubber, particularly problematic in masks where it could affect the 'fit' of the mask

Repair of equipment is quite rarely needed as long as it is looked after well but:

- It is worth checking mask and fin straps for any sign of perishing, cracks or splits as replacements can be purchased
- Buckles on some fins can crack or break but again, replacements can generally be purchased

Storage:

- Store basic equipment after it has dried in a cool dry place
    - If storing fins upright, make sure they are supported on the 'foot' end not the fin end – after a while if left on the tips of the fins they can bend and distort.

Additional equipment

Depending on where you are learning to snorkel or go snorkelling when you have gained your Snorkel Diver qualification, there are additional items of equipment you may need:

- A wetsuit – depending on the water temperature these can vary from thin wetsuits (sometimes known as 'skins') to thicker neoprene wetsuits. Wetsuits are worn to give some thermal protection: the colder the water the thicker the wetsuit!
- Wearing a neoprene wetsuit will keep a snorkeller warmer but it will increase the snorkeller's buoyancy – floating on the surface. This is not a problem until wanting to dive so, to counteract the buoyancy of the suit, a weightbelt is required. Weightbelts are simple belts that allow weights to be added or removed so that the snorkeller can dive comfortably but is also still buoyant enough to float on the surface without sinking. One of the most important things about a weightbelt is that it must have a quick release buckle – if a snorkeller has a problem the most important thing is to remain on the surface and 'ditching' the weightbelt quickly easily ensures this.
- A snorkelling vest is basically a bag that can be worn and filled with air to give the snorkeller extra support if required at the surface. Most fit like a bib with straps to secure around the body. Air is introduced/expelled via an inflation tube. It is important to remember that the vest will need to be fully deflated before attempting a snorkel dive!

Additional equipment care

Additional equipment care is as follows:

- Cleaning wetsuits, snorkel vests and weightbelts is relatively simple: wash in fresh water after every dive. It is advisable after a number of dives to wash suits and the inside of snorkel vests with a mild detergent solution to prevent build up of bacteria. Never breathe from or suck the air out of a jacket by the inflation tube as any lurking bacteria in the jacket could cause nasty chest infections. Remove any sand, grit or weed from buckles and snorkel vest inflation mouthpieces. Allow all equipment to dry out of the sun.
- Repair of equipment is rarely needed but it is worth checking the following every so often: zips (if any), straps for fraying, and buckles
- Storage should be in a cool dry place, and it is advisable to hang suits

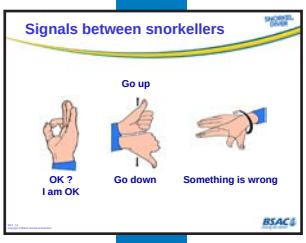
Signals

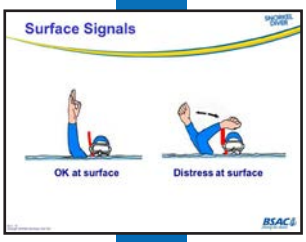
Although snorkellers can remove the snorkel mouthpiece and talk on the surface, there may be conditions, such as a choppy sea, that will make this unpleasant and it is impossible to talk when underwater. Snorkellers use signals that are part of a simple sign language used throughout the diving world.

The important point to emphasise is that all signals require a clear and unambiguous response.

Cover the following signals used between buddies (a pair of snorkellers) or group of snorkellers in the water: OK, go up, go down, Something is Wrong (Iffy signal!), Stop, You or Me, and Distress Underwater (requires rescue). The other signals to cover are those given by a snorkeller on the surface to someone watching them from the surface – the OK signal needs to be bigger than the inter-buddy signal and, should a problem arise, the distress signal needs to be clear too. Add that sometimes waving to someone watching on the surface can be mistaken for a distress signal – use it only if there is a problem.

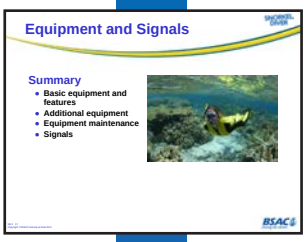
Instructor note: *If using the PowerPoint presentation the best visual aids for teaching signals are the hands. The PowerPoint VAs can be used as revision.*





Summary

This lesson has given you an understanding of what features to look for in basic equipment, mask, snorkel and fins, and has covered additional equipment that snorkellers might use in the future (or are using on the practical sessions of this course). Snorkelling equipment needs to be looked after and maintenance is relatively easy. Lastly, the lesson covered the signals that snorkellers use between themselves, other snorkellers in the water and to people watching them on the surface.



Some Snorkelling Science

Lesson objectives

An introduction to how air and water pressure affect the snorkeller and a look at the human body and the effects of snorkelling on it.

Achievement targets

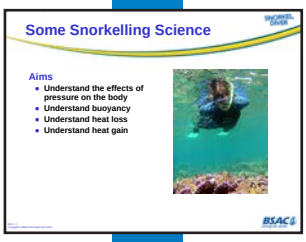
At the end of this session students should:

- Understand what air and water pressure is
- Understand how pressure affects snorkellers, particularly via their air spaces
- Understand what buoyancy is
- Understand the dangers of hyperventilation
- Understand the implications of getting cold, how to deal with cold and how to avoid sunburn

Instructor Note: *This lesson can be taught using a variety of 'hands on' demonstrations to teach what might seem a complicated subject to children. Suggestions are given at the end of each section.*

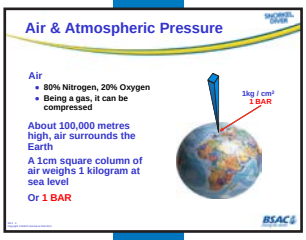
Aims

Explain that students have already learnt how equipment helps us adapt to the snorkelling environment, but there are other factors that snorkellers need to be aware of, including snorkelling's effects on the body and how we cope with them.



Air and atmospheric pressure

To understand the effects of the underwater environment on snorkellers we need to start in the environment we are attuned to – the earth's surface:



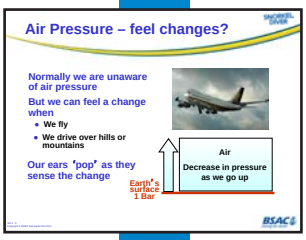
- The air we breathe is approximately 80% nitrogen and 20% oxygen and it is the oxygen than is important – we cannot live without it!
- Air, being a gas, is compressible – a volume of air can be squashed into a smaller volume – eg bicycle pumps, tyres etc
- About 100km (60 miles high) of air surrounds the earth. The air has a downward force on the surface – air has weight and it exerts pressure
- The weight of the air in a 1cm square column stretching up about 100km high is 1 kilogram at sea level. Students can visualize this as a column about the size of a fingernail stretching up about 100km. The reason we do not feel the weight of the air above and around us is that the body, consisting of lots of water and some air, is in balance (or 'equilibrium') with the surrounding air pressure
- The 1kg/cm^2 is known as 1 Atmosphere, more commonly referred to as 1 Bar (Barometric pressure) and although it can vary a little due to weather conditions, we use this as a measurement for diving purposes

Instructor note: *You can use a 1kg weight for students to hold to understand that this is the weight of air being balanced on a fingernail but we don't feel it as our bodies are in balance with surrounding* ***air*** *pressure.*

To also show that air has weight you can use the following:

Drill holes (or make notches) 15cm from each end of a narrow 1m length of wood or stiff plastic. Then, make a hole in the exact center of the stick, 50cm from each end. Place a cord or wire through the center hole and suspend the stick from a chair back or a rod. Blow up a large balloon, tie its mouth tight using a wire tie wrap (from freezer bags) and hang it from one of the end holes of the stick. Then, suspend a small can/box from the hole at the other end of the wood and place flour, sugar, or rice in the can until the stick balances. Then, slowly let air out of the balloon and the can/box sinks down. When air leaves the balloon, the balloon becomes lighter and this shows that air has weight.

Can we feel change in air pressure?



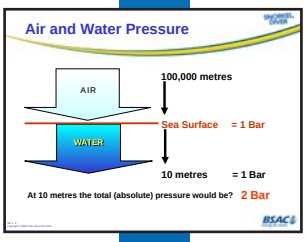
Normally we are unaware of any changes in pressure but there are a couple of occasions when we can feel them.

When we fly in aircraft or drive over hills and mountains we sometimes experience ear 'popping'. As you ascend in an aircraft or drive up a big hill, the air pressure around you decreases because the air high above the surface of the Earth is less dense than air at the surface. The air trapped inside your ear will cause your eardrums to push outward. This expansion causes the discomfort you may feel before your ears "pop". Your body can equalise the pressure between inside your ear and the atmosphere by allowing some air from inside your ear to escape through small tubes to the throat. Pinching your nose and gently breathing into it, or swallowing (which is why eating a sweet helps on take off) allows some of the trapped air to escape and, when you feel this pressure release, you hear the change, the 'pop'.

On the way down from a flight or big hill, the air pressure increases while inside your ear is still at the lower pressure it has adjusted to. Now, the extra pressure pushes the eardrums inward. Eventually, the pressure will equalise again, but many people don't like to wait, they 'equalise' the pressure by pinching the nose and gently breathing into it, or swallowing.

Instructor note: *Some students may not have experienced ear 'popping' so it is a good idea to see whether they can all clear their ears (preparation for in water session). sessions) Techniques to use are: pinch the nose with thumb and forefinger and gently blow through the nose; pinch the nose with thumb and forefinger and swallow; wiggle the jaw; or put the tongue to the roof of mouth Check whether any have colds before doing this but remind them that if they use the hold nose and blow technique, the blow is very gentle.*

Air and water pressure

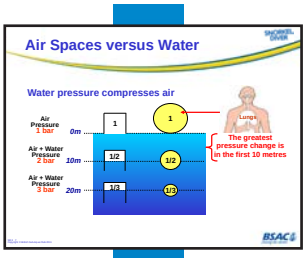


So what has air got to do with snorkelling and snorkel diving, other than as humans we need it to stay alive?

- Water, unlike air, is a very dense medium and is not compressible
- We have established that at sea level the air in the atmosphere exerts a downward pressure of 1kg/cm^2 – 1bar (remember the column of 10,000 metres of air balanced on a fingernail)
- Water cannot be compressed – it is a very dense and heavy medium. If you dived down below the surface balancing a 1kg/sq.cm column of sea water on your fingernail you would only need to go down 10m for the pressure to reach 1bar
- So if we have snorkelled down to 10m, we are not just experiencing the water pressure but the air pressure as well – we are experiencing a total, or absolute pressure, of the air pressure at the surface - 1bar - plus the water pressure at 10m – 1 bar – the total is 2bar

Instructor note: *You can demonstrate water pressure: use an empty milk carton or empty plastic bottle and punch 3 or 4 holes one above the other down the side of the carton/bottle. Cover the holes with a long strip of adhesive tape and fill the carton/bottle with water. Then place the carton or can in a sink or a basin and pull off the tape. You will see that the stream of water from the lowest hole travels farthest - the water at the bottom of the carton has the force exerted by the pressure of the water above it.*

Air spaces versus water



If pressure is exerted on air, remembering that air is compressible, it will squeeze and reduce the air volume. If water pressure is exerted on air, then the deeper the air volume is taken down, say in an upturned open rigid container such as a bucket, the higher the squeeze on the volume of air. The compression of the air volume for every 10m water depth is fairly easy to remember:

- At 10m, 2bar pressure, the volume reduces to one half of its original volume
- At 20m, 3bar, it reduces to one third of its volume
- At 30m, 4bar, it reduces to one quarter of its volume

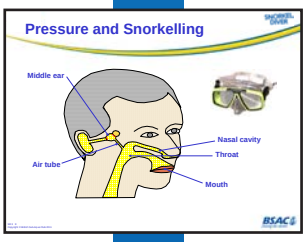
Fortunately, as humans have a high water content in the body (70-85%) most of it can adapt to the increase in water pressure snorkellers go to. However there is one important area of the body that is an air space, the lungs. These are not rigid air containers like a bucket but, more like two balloons, are flexible air spaces. As we breathe in and out, the elasticity of the lungs allows expansion and contraction. If a snorkeller takes a breath and dives down, immediately the water pressure squeezes the air volume in the lungs and they get smaller. Fortunately, we don't feel this unless we dive down very deep – way beyond the depth where snorkellers can dive.

- Take students through the reduction in volume of a balloon, the lungs on a swimming dive, and how they expand back to normal on coming up.

Instructor note: *Using a tank or deep glass bowl, hold a glass with its mouth down and push it into the water. You will see that the water enters the glass a little way. No bubbles of air escape.*

Explanation: The water forces the air into a smaller space – the air is being compressed.

Pressure and snorkelling



So why is it important to understand pressure when snorkelling? The answer is that it explains what we feel when underwater and also how we can overcome the effects of pressure.

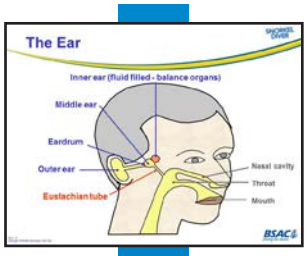
As mentioned earlier, the biggest air spaces in our bodies are the lungs and although water pressure does have an effect on them, we cannot feel it. But the air spaces in our heads – particularly the nose and the ears - are subject to pressure effects when snorkelling that we can feel and do need to understand.

We breathe in and out using our noses or mouths. Air moves in and out of the lungs via the throat and either the nose, using the nasal passage, or the mouth.

When we wear a mask, we are extending the nasal air passage with the air in the mask. When snorkel diving, the water pressure will compress the air in the mask as we descend and we experience something called 'mask squeeze'. It can become uncomfortable and leave a mask shaped ring on the face when we surface! To resolve the mask squeeze, gently blowing out through the nose will equalise the pressure.

The ears have an air connection via a small tube at the back of the throat to the middle ear and we are going to look at the ears in more detail.

The ear



Sound travels in waves. It's like when you throw a stone into a pond - waves travel from it. Imagine that the stone is the sound (eg. a word we say), then our words, music etc. can make waves in the air, just like the stone can make waves in water. Our ears can then pick up the waves; our ear converts these waves into signals that travel to the brain and the brain makes them into words and music.

The ear is divided into three sections:

- **The outer ear** is the part of the ear we can see, it starts with the bits that stick out either side of our head which act as funnels, to collect a sound's air waves and direct them into the ear canal. This canal is either full or air or, when we snorkel dive, will fill with water.
- **The eardrum** is at the end of the ear canal and blocks air or water travelling any further into the ear. The eardrum is a membrane that, as it suggests, vibrates in response to the sound waves that have travelled through the ear canal. The eardrum separates the outer ear from...
- **The middle ear**. is an air filled space which contains small bones that are attached to the eardrum. As the eardrum vibrates in response to sound waves, the bones transmit the vibrations across the middle ear to another membrane that separates the middle ear from the inner ear. The middle ear, an air filled space, is connected to the back of the throat by a small air tube...
- **The Eustachian tube** These small tubes are normally closed but when you swallow or yawn you briefly open them. Any clicking you hear as you yawn indicates that the tubes are opening and air is entering them. If you pinch your nose and blow gently against closed nostrils you can force air up the Eustachian tubes into the middle ear.
- **The inner ear** is fluid filled to protect all the nerve endings in it. The vibrations that pass through the membrane separating the middle ear from the inner ear are converted to fluid waves and these are sensed by the nerve endings, which send the information to the brain.

Instructor note: *You can build a very simple model of the ear by using a plastic bottle with the bottom cut off, or a small funnel. Make the eardrum by stretching a balloon or cling film over the bottom of the bottle or wide part of the funnel so that it is as flat as possible and fix with a rubber band. Blow into the top of the bottle/ funnel tube and the balloon/cling film should move outwards a little way. You have added extra pressure to the inside of the bottle/funnel and are moving the 'eardrum'.*

How pressure affects the ear

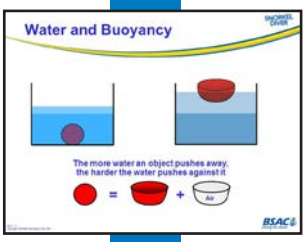
In everyday life, we don't really notice how pressure affects the ear (other than flying or driving over hills as we have previously discussed). The ear remains in balance with the pressure around us because we involuntary swallow saliva and, as we swallow, we open the small (Eustachian) tubes that connect the middle ear to the back of the throat. We mentioned that if we fly and feel discomfort in our ears, we can pinch the nose and gently blow against it or swallow to ease the discomfort. This is called a Valsalva manoeuvre, but can just as correctly be referred to as ear clearing:

- When we go snorkelling and dive below the surface even in quite shallow depths, the water pressure increases and presses on the eardrum pushing it inwards. A Valsalva manoeuvre opens the air tubes to the back of the throat, introduces more air into the middle ear and the increased pressure in the middle ear pushes the ear drum back and eases any discomfort.
- Problems arise, even in shallow water, if there is a blockage in the air tube that

prevents ear clearing. This is most common with colds when there is mucus congestion. The only thing to do is ascend a little and ear clear again. However, this may not resolve the problem so then the only thing to do is surface and not attempt any more dives.

- Much less common is a blockage in the outer ear. A tight fitting hood may block off the ear canal with air trapped between the blockage and the eardrum. Trying to resolve by ear clearing will push the eardrum outwards and result in discomfort. Ensure that water is free to enter the outer ear and never wear earplugs when snorkel diving.
- Never force ear clearing or continue to dive down whilst experiencing discomfort or pain because you will damage ear tissue and may burst your eardrum! You won't be able to snorkel dive for some time after a burst eardrum.
- Do not dive with a cold, congestion or infection. If you have to go snorkelling in this condition stay on the surface.

Water and buoyancy



Why do some things sink and other float? It was a Greek philosopher, Archimedes, who worked it out when he got in and out of his bath.

When an object is submerged, its weight pushes down and moves water out of the way. The water pushes back with an upward force (upthrust) equal to the weight of water that was moved out of the way by the object. An object immersed in water therefore apparently loses weight.

Instructor note: *This can be demonstrated in water by placing a weight at the bottom and getting students to lift it – easy underwater but notice how much heavier it is out of the water.*

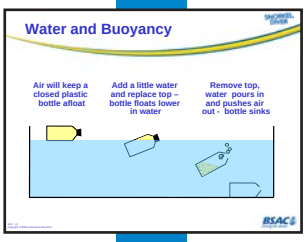
The following can be demonstrated using a glass bowl or tank of water and plasticine or modelling clay:

- A ball of plasticine or modelling clay dropped into a bowl of water will sink because its weight is more than the upthrust; in other words it is heavier than the water it displaces. The water the ball has displaced has to go somewhere and it does; it rises and the water level is higher than it was before the ball was dropped in.
- If we remove the ball of plasticine and shape it into a boat or bowl with high sides it will increase the surface area. Although the plasticine weighs the same, making it into a boat or bowl shape pushes or 'displaces' more water out of the way and so the water pushes back harder - the upthrust has been increased - and the boat floats. With the greater displacement of water, the level of water in the bowl is higher because of the greater amount of water displaced than the submerged ball.
- Steel ships weighing thousands of tons float because of their large 'displacement' which results from the large volume of air contained by the shape of the hull.

Instructor note: *Students can feel how water tries to push things up by using a ping-pong ball in water. Try to push it underwater and it always bobs back – you can actually feel the water the ball has pushed away, pushing back. You can also feel how water tries to push things up by standing in water, chest deep with your arms by your side. Let your arms go and they will slowly rise.*

Air, such as that in the ping-pong ball, is used on purpose to ensure things float, such as in a lilo or airbed, or arm bands or even in all the tiny air bubbles in swim floats. If the air is lost or leaks out ,items lose their buoyancy.

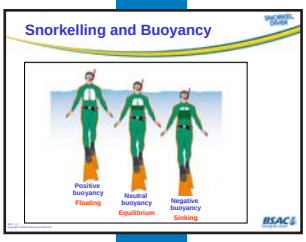
Instructor note: *The following can be demonstrated using a glass bowl or tank of water and a bottle with lid:*



- Air will keep an empty closed bottle afloat. If you remove the top and add a little water, the bottle still floats but is lower in the water.
- If you remove the top, the water pours in and pushes air out and the bottle sinks.

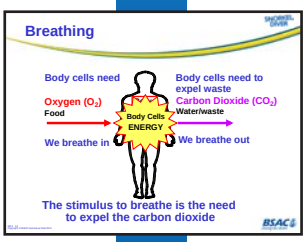
Instructor note: *You can also demonstrate the principles of the above using oranges. Fill a bowl with water and see if you can sink the orange. Take the orange out, peel it and place it back in the water and see what happens – it will sink. The orange sinks because the orange peel is full of trapped air pockets which makes the orange light for its size, so it floats. When you remove the peel (including the air pockets) the orange weighs a lot for its size and it sinks because the orange is denser and heavier than the water.*

Snorkelling and buoyancy



- Snorkellers want to float or fin on the surface for most of the time and it is the air in the body, particularly the lungs, that keep them there: it is called positive buoyancy. If you wear a wetsuit this increases your positive buoyancy because of all the tiny gas bubbles in the fabric of the suit.
- When you want to dive down, just breathing out a little will reduce the lung size (remember the balloons and water pressure) so you can fin underwater between the surface and the bottom – neutral buoyancy. If wearing a wetsuit, a weightbelt might be needed to counteract the effect of the bubbles of gas in the suit fabric. When you want to dive deeper, breathing out and finning down will reduce the lung size more. Even the gas bubbles in the suit will begin to be squeezed with the pressure, leading to negative buoyancy, so you will need to fin up a little to start an ascent and, as you ascend, your lungs (just like the balloons), will expand back to normal size, as will the gas bubbles in a wetsuit.

Breathing



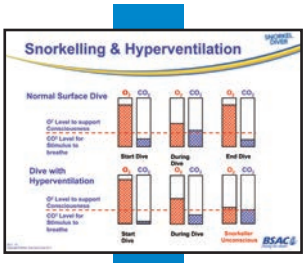
The human body is composed of millions of cells, each with a particular function. Cells are the body's building and storage blocks.

- Body cells need food and oxygen for energy. Food is taken in via the digestive system. To release energy in a form that the cells can easily use, the food must be broken down by a series of chemical reactions within the cells. Oxygen is a vital ingredient in this process. By breathing in we take oxygen in via the lungs and it is delivered to the cells by the blood circulating around the body.
- The cell uses the energy but, as a result, waste products are produced and need to be removed. The waste product of some of the oxygen used in creating energy in the cells is another gas, carbon dioxide and by breathing out, we expel it via the lungs from the body.

The body cells can store many of the substances it needs, eg. body fat, as an energy reservoir, but it cannot store more than a couple of minute's worth of oxygen so it needs a constant supply of oxygen to the cells, and constant removal of the waste product carbon dioxide. Consequently we need to breathe in and out and most of the time, although normally we are totally unaware we are doing so.

- You might think that it is the need for oxygen that makes us breathe but it is getting rid of the waste product from the body, the carbon dioxide, that triggers or stimulates the desire to breathe.

Snorkel diving and hyperventilation



Some people can hold their breath for longer than others but ultimately everyone succumbs to the stimulus to breathe in order to expel the carbon dioxide.

Normal breath hold dive

At the start of a dive, following normal breathing in and out, carbon dioxide and oxygen are at their normal levels.

- During a dive, we are using energy so the level of oxygen in the cells is reducing and the waste product, carbon dioxide, is rising, towards the level that triggers the desire to breathe for which, obviously, we have to surface. This happens before the level of oxygen drops to the minimum level necessary to support consciousness.
- At the end of the dive, breathing in and out returns the oxygen and carbon dioxide to their start levels.

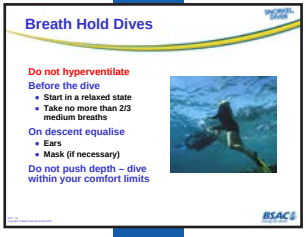
Hyperventilation

This is an attempt to override the normal breathing control mechanisms by rapid, unusually deep breathing. The mistaken belief is that it increases the intake of oxygen to allow the snorkel diver to remain underwater longer. However, the increase of oxygen is minute, and this is where the danger lies.

- Hyperventilating at the start of a dive increases the level of oxygen by only a very small amount but it does reduce the level of carbon to quite a low level.
- During the dive the oxygen is used as normal and is carbon dioxide produced but, as the carbon dioxide level had been reduced at the start of the dive, its rise to the level that triggers the stimulus to breathe is delayed.
- The oxygen level continues to fall and reaches the point where it cannot support consciousness **before** the carbon dioxide reaches the level that triggers the stimulus to breathe. On land a person would faint, which allows the still breathing body a period of recovery back to consciousness. But if a snorkeller 'faints' and becomes unconscious underwater (known as 'shallow water black out') there is no air to aid recovery and with lungs reduced in size they will sink and drown.
- Hyperventilation is a practice that should be avoided at all costs. The snorkeller should start the dive in a relaxed state and should take no more than two or three medium breaths.

Instructor note: *If students raise any points about the sport of free diving where breath hold divers go to extreme depths and are seen hyperventilating, the instructor should clarify that free divers have gone through a very long training regime to incredible levels of fitness in an attempt to reduce cell oxygen demand while attempting this type of diving. They also always have in-water support because many do become unconscious underwater or on their return to the surface, and some have not survived.*

Breath hold dives



Do not hyperventilate

Before the dive:

- Start in a relaxed state
- Take no more that 2/3 medium breaths

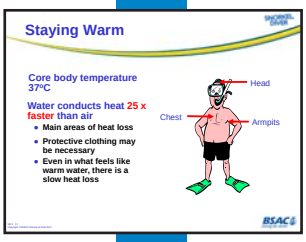
On descent equalise:

- Ears

- Mask (if necessary)

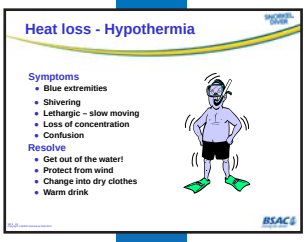
Do not push depth, dive within your comfort limits.

Staying warm



- Our bodies have temperature sensors to maintain the 'core' body temperature at 37 °C. The core consists of the important body areas: brain, spinal cord, chest organs, abdomen and pelvis and these are surrounded by a peripheral 'shell' consisting of the limbs, muscles and skin. The core temperature is controlled within very narrow limits, plus or minus 2ºC.
- Heat loss from the body depends on many factors but the main one is a cooler temperature around the body drawing the heat away. Water conducts the heat away from the body 25 times faster than air.
- The main areas of heat loss are from the head and face, the front of the chest, the groin and the armpits.
- As we do on the surface when it is cold, we wear extra clothing. Depending on the temperature of the water, snorkellers may require protective clothing, such as wetsuits, to reduce the heat loss.
- Even snorkelling in what may feel like warm water, if the water is colder than the body, there will be heat loss and you will start feeling cold.

Heat loss - hypothermia



- If the body is not insulated against the cold, it begins to protect the core temperature by narrowing the blood vessels and therefore reducing bloody supply to the body's peripheral shell. As the peripheral blood flow decreases, overall heat loss is reduced. The initial areas affected are the hands, feet, nose and ears, which become bluish in colour because their blood supply is reduced. They also begin to feel numb.
- If the peripheral cooling continues 'shivering' starts - the muscles begin contracting and relaxing quickly to generate body heat. This is a clear indication that the body needs protecting from the cold either by moving to a warmer environment or adding additional clothing or both.
- If nothing is done to remedy the situation and shivering stops, the body is sinking into a state called hypothermia, which can become a very serious condition where the body slowly shuts down. People with hypothermia will become lethargic (slow moving), lose concentration, get confused, and eventually lose consciousness as the body shuts down.

If snorkellers start to feel cold there are easy ways to resolve the situation:

- Common sense says that feeling cold in the water is an indication to get out of the water to prevent further heat loss
- Once out of the water, even if wearing a wetsuit, you may need to protect the body from wind chill
- Change out of wet clothes into dry ones
- Have a warm drink.

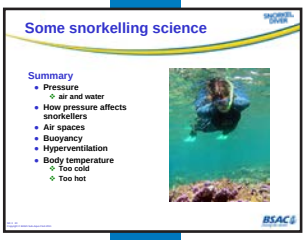
Staying cool when the weather is hot

Snorkellers can stay cool when the weather is hot by getting in the water but there is one thing to beware of and that is getting sunburnt.

Protection from the sun:

- Water may be cool but lying on the surface of the water for some time in strong sunshine, even though you feel mostly submerged, can result in getting burnt on the back of the head, neck, shoulders and back of legs
- To prevent sunburn wear a wetsuit or skin suit or a t-shirt, and protect the head and neck with a hat (which you will probably need to pass to your buddy when doing surface dives!)
- Use waterproof sunscreens

Summary



This lesson has explained:

- Pressure - air and water pressure
- How pressure affects snorkellers
- Buoyancy
- The importance of never hyperventilating before surface dives
- Body temperature - the importance of thermal protection if it is cold and of cover ing up and using sunscreen as protection from the sun.

Safe Snorkelling

Lesson objectives

This session highlights the importance of planning every snorkel dive and, whether it is during this course or in the future, of having the basic understanding of the effect of wind, waves, tides and currents that will enable you to check/assess that a snorkelling site is safe. The session also emphasises the importance of snorkelling with a buddy and agreeing the dive plan and having someone watch you at all times when you are in the water – surface cover. Lastly, but by no means least, as visitors to the marine world, it covers the importance of respecting that environment.

Achievement targets

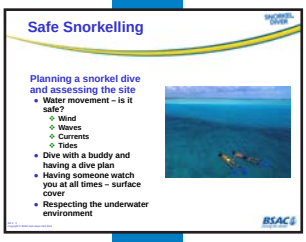
At the end of this session students should:

- Have a basic understanding of wind, waves, currents and tides which enables them to check/assess that a snorkel site is as safe as possible
- Understand the importance of snorkelling with a buddy and having a dive plan
- Understand the importance of having surface cover, someone watching you at all times
- Understand the importance of protecting the underwater environment

Instructor Note: *This lesson can be taught using a variety of 'hands on' demonstrations to teach areas that might seem a complicated subject for children. Suggestions are given at the end of each section.*

Aims

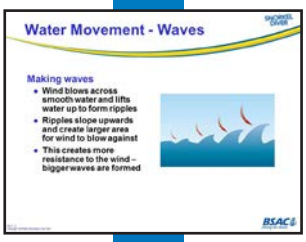
Explain that all snorkel dives need to have a plan and that assessing the site is important for snorkelling safety. Understanding the water conditions helps a lot so this lesson is going to look at what could affect the water we snorkel in; wind, waves, currents and tides. Diving with a buddy is another safety factor, with both agreeing and diving the plan and ensuring that you have 'surface cover', someone watching you at all times. Snorkellers should respect the underwater environment and leave it undisturbed for others to enjoy in the future.



Water movement - waves

Whether it's a pond, a lake or the sea it is the wind that makes waves.

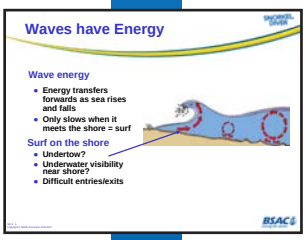
- Imagine a completely flat sea and then a gentle breeze begins to blow and begins to lift the water up to form ripples.
- The ripples slope upwards and create a larger area for the wind to blow against
- This larger area creates more resistance to the wind and, if the wind increases, bigger waves are formed.



Instructor note: *Students can make waves with a bowl of water and straws. They can take turns blowing through their straw just over the surface of the water. A gentle blow creates a gentle breeze and a harder blow creates a stronger breeze. You can also use a paper fan to generate the same effect.*

Waves have energy

- Looking at waves you might think that all the water in the wave is moving across the surface but actually only the shape of the wave moves, not the water itself. The water in a wave primarily moves up and down in a circular pattern. This creates energy that is transferred forward by one wave to the next.



If you are in the sea or in a pool that has a wave machine, the waves don't push you forwards or backwards. You will bob up and down with the wave in more or less the same place.

Instructor note*: You can use a length of rope to show the wave energy principle. Lay the rope out on the ground and, holding it at one end, move it up and down vigorously and a wave will move down the rope but the rope stays in the same place. The further the rope 'wave' travels away from the source of energy (the arm), the slower and lower it becomes.*

Another way to show how energy can be transferred is to use five marbles representing water molecules. Place four of the marbles in a row touching each other. Roll the fifth marble gently at one end of the row and the marble at the far end will roll away while the others remain where they are.

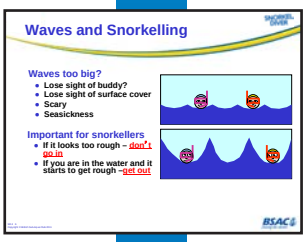
- However, if a wave reaches shallow water such as a beach, it will behave quite differently. As the wave approaches shallower water, the movement over the bottom causes friction, which slows the wave down. This makes the wave higher and steeper and, eventually, it falls over, releasing its energy as surf on the shore.

So why is surf important to consider when planning a snorkel dive?

Surf on the shore

- When the surf runs back into the sea it can cause an undertow, water that can pull you into the sea. If the waves and surf are big they can knock you off your feet and tumble you around in the water.
- The bigger the waves and the surf, the more likely it is that underwater visibility will not be good for snorkelling. As surf runs ashore and then back into the sea it can disturb the seabed. You can often hear this happening on a pebbly beach. Even beyond the line of breaking waves the underwater visibility is reduced.
- Entries and exits could be difficult, if you keep being knocked over.

Waves and snorkelling



Looking at the waves is important. If the waves are large it will affect your enjoyment of snorkelling in a number of ways. We have already talked about the problems that could be encountered with surf but waves can be a problem whether snorkelling from the shore or a boat:

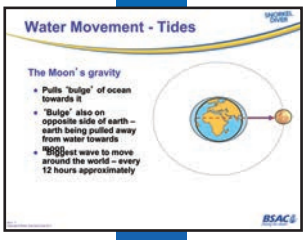
- If the waves are big it can mean that you may lose sight of your buddy or even lose sight of your surface cover while bobbing up and down in the water.
- Snorkelling in big waves can make some snorkellers quite uncomfortable and it can be rather scary.
- The other effect of big waves is that snorkellers may begin to feel seasick with the up and down motion of the waves.

  Feeling seasick on a boat is caused by the boat's movement on the waves overriding the sensitive balance organs in the ears. Sitting or standing in the fresh air, near to the centre of the boat, where its movement is less, and looking up at a fixed point on the horizon can help. The balance organs can adapt to the movement after a short time: it's called getting your 'sea legs'. If you have been sick, drink water before going snorkelling. Sometimes getting in the water helps, but if you have been very seasick you may feel the best thing is not to snorkel this time and return to shore.

Important for snorkellers:

- If the sea looks too rough, don't go in.
- If you are in the water and it starts to get rough, get out.

Water movement - tides

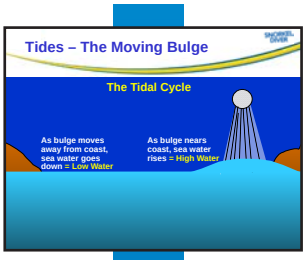


If you have been to seaside you will have noticed how the sea comes in and goes out and people refer to high and low tides. But what causes the tides?

The moon's gravity:

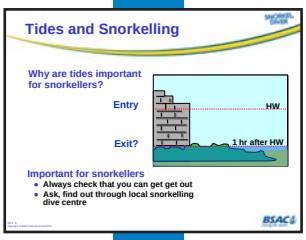
- The moon orbits around the earth and its gravity, its attractive force, pulls a 'bulge' of water towards it which lifts the sea up
- At the same time, there is a bulge on the opposite side of the earth because the earth is also being pulled towards the moon (and away from the water on the far side)
- The bulge is the biggest wave to move around the earth approximately every 12 hours but remember what we have discovered about waves: they don't move water forwards, it is simply lifted up and down. (Remember the pools that have wave machines – you bob up and down. If the waves pushed people forwards or backwards it would be very dangerous!)

Tides – the moving bulge



- As the bulge moves away from the coast the sea water level lowers – the lowest point is called low water.
- As the bulge nears the coast the sea water rises – the highest point is called high water.

Tides and snorkelling



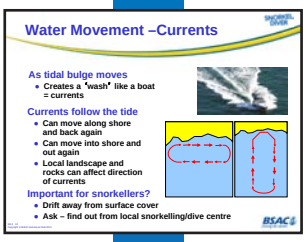
Will tides affect snorkelling? It depends on where you are. For example, in a sandy bay it may be easy to enter and exit the water at high or low water if there is no surf, but if the bay has rocks that dry out sometime between high and low water, then the entry might be easy but an exit could be slippery and difficult.

A snorkelling entry from a set of steps at high water might look nice and easy but if you come back just an hour after high water can you exit the water easily?

So tides are important for snorkellers:

- Always check that you can enter and exit the water easily
- Ask: seek out local knowledge. (You may also discover the best places to go snorkelling).

Water movement – tidal currents



As the tidal bulge moves around the earth:

- It creates a 'wash' like a boat and this wash moves the water, and moving water means currents

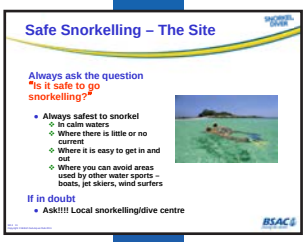
Currents follow the tide and as the tide rises and falls, the currents can flow in one direction and then back in the other:

- They can move along the shoreline and back again
- They can move into the shore and then out again
- Local land features, such as rocks, headlands and islands can affect the direction of currents.

So currents are important for snorkellers:

- Currents can cause snorkellers to drift away from their surface cover, whether it is on shore or on a boat
- Know what currents might affect a site: snorkelling against currents is very hard work and very tiring. Seek out local knowledge or ask at local snorkelling/dive centre.

Safe snorkelling – the site



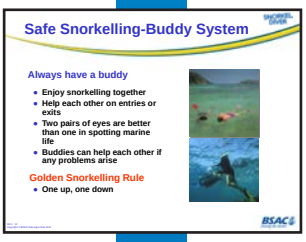
When looking at a snorkelling site always ask the question "is it safe to go snorkelling?".

- It is always safest and easiest to snorkel:
  - In calm waters
  - Where it is easy to get in and get out
  - Where there is little or no current
  - Where you can avoid areas used by other water users such as boats, jet skiers and wind surfers

- If in doubt – ask!!!! Local knowledge or a snorkelling/dive centre will help with any information you need

Instructor Note: *Using paper cut outs, a white or chalk board or large sheets of paper and pens, get students to build up what is a good snorkelling site eg a bay. Add where the best entry/exit could be, items of interest such as rocks, and point out areas that might be unsafe eg out of the bay by a headland where there may be currents, a slip where boats launch, etc.*

Safe snorkelling – buddy system



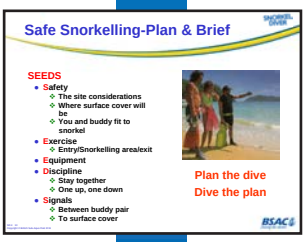
As you will learn during the practical session, snorkelling with a buddy is not only far safer than snorkelling alone but is also more fun.

- It is much more fun to snorkel with someone who shares the experience with you and you will probably learn quite a lot from each other too.
- Buddies can help each other on entries and exits, holding each other whilst removing fins, walking over slippery rocks etc.
- Two pairs of eyes are much better than one in spotting marine/underwater life.
- Buddies can help each other if any problems arise, such as getting tired or getting cramp.

As you may already have learnt there is one Golden Snorkelling Rule when doing surface dives:

- One up, one down.

Safe snorkelling – dive plan & brief



Having assessed that the site is as safe as possible to go snorkelling, making a dive plan and talking it through with a buddy adds to the safety of the dive ahead. Sometimes you might be buddied up with someone you don't know, so talking about the dive beforehand really helps. Most divers use the word SEEDS to help them remember what to cover when talking the dive plan through, the brief.

- Safety – having assessed the site, are there any particular things about the site that need to be mentioned? For example, using steps in and out of the water needs care, as they may be slippery, so fins will be put on in the water. Know where and who the surface cover is, which is important should any problems arise. Last, but not least, are you and your buddy fit to snorkel?
- Exercise - why are you snorkelling? Is it just to have fun, investigate a particular area or maybe try and find a new snorkelling area? Decide where you are going in and getting out and how long you are going to be.
- Equipment -
- Discipline – always stay together and remember the Golden Rule when surface diving – One Up, One Down.
- Signals – check signals between buddies and also what signals the surface cover should expect as normal ones or emergency ones (your surface cover might not be a snorkeller!)

Safe snorkelling – surface cover

We have talked about the importance of someone watching you in the water at all times – but it is important for snorkellers to make sure that they can see their surface cover at all times: if you can't see them, they can't see you!

- Surface cover can be someone watching from the shore/lakeside and whilst training, can be from a poolside. The important thing is that they know what you are doing and for how long.
- Surface cover can also be someone watching from a boat. Quite often on a boat you will receive a group dive brief explaining what the site is and what to expect. If snorkelling from a branch or snorkelling/dive centre boat, perhaps at a holiday location, the surface cover (or group leader) will tell you how long you have in the water. Don't go over the time allowed: it may be that the site has currents after a particular time and the boat captain is thinking of your safety. If you use a large snorkelling boat, typically from a snorkelling/dive centre when on holiday, with many snorkellers on the trip the surface cover should count the buddy pairs entering and leaving the water.
- You might snorkel in a small group with a group leader/instructor in the water with you acting as group surface cover, but there should always be someone on shore who knows where the group is and what time they will be back.

The importance of surface cover is quite simple: if you have a problem help is quickly at hand.

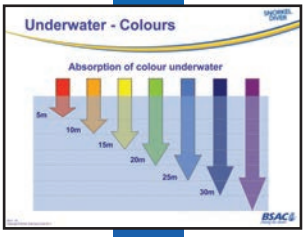
Surface Marker Buoys (SMBs)

Snorkellers quite often carry, or get asked to carry by the Snorkel Dive Manager (the person responsible for a group of snorkellers), a Surface Marker Buoy on snorkel dives. It generally consists of an inflatable buoy (which can be of various shapes and sizes and colours), a reel holding the line which is attached to the buoy and sometimes has a piece of cord attached to the reel with a quick release clip so a snorkeller can attach it to themselves leaving the hands free.

An SMB is useful because:

- It marks the buddy pair's position in the water
- It is easier to see from a boat or the shore than just the snorkellers' heads
- If a snorkeller gets tired (or gets cramp) they can use the SMB as in-water support before aborting the snorkel dive

Underwater colours



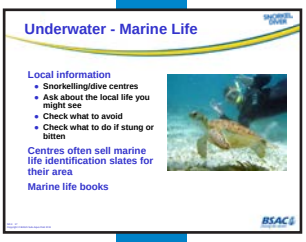
We have mentioned that underwater visibility can be affected by wave action: there is really no point in going snorkelling unless you can see what is underwater!

Even with good visibility, snorkellers cannot see as far underwater as they can on land because available light and particles in the water will restrict their vision.

White light, such as sunlight, is made up of the colour spectrum, red, orange, yellow, green, indigo, blue and violet. Water absorbs some of these colours more strongly than others, which explains why looking down from the surface to a reef wall the main colour looks blue. In natural light, marine life that is red will appear blue after about 5 metres, while the colours further up the colour spectrum fade progressively the deeper you go.

Snorkel diving is generally in the shallower depths so loss of colour is minimal but if snorkel diving or looking down from the surface beyond 5m, red colours will fade. Only by using artificial light, a diver's torch, can the true colours be revealed.

Marine life



One of the joys of snorkelling is seeing marine life in its natural environment. Wherever you snorkel you will always see something. The diversity of sea life over the earth is wonderful and, if snorkelling on holiday, it is a very good idea to find out what you can expect to see.

- Seek local information and visit or arrange snorkelling trips with a local snorkelling/ dive centre.
- Ask about the local marine life you can expect to see.
- Check what marine life you should avoid.
- Check what to do if stung or bitten, which can happen but is quite rare.

Centres often sell waterproof marine life identification slates that you can carry with you when you go snorkelling to help identify what you see.

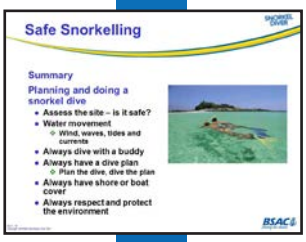
If there is something you can't identify there are numerous marine life books with lots of photographs to help you.

Respect the environment

As part of good snorkelling practice, snorkellers should demonstrate care and protection of the underwater environment. There are some key rules to follow:

- Ensure good buoyancy and careful finning to prevent damage to reefs and other underwater life
- Looking but not touching is critical for reef, particularly coral reef, preservation
- Do not take anything underwater except memories or photographs
- Do not aggravate marine animals: you are a visitor to their world.

Safe snorkelling – summary



This lesson has looked at how to plan and carry out a snorkel dive

- Assess the site – the key question to ask "Is it safe".

To help with assessing the site we looked at water movement and understood what will affect the water - wind, waves, tides and currents

- Always dive with a buddy – much more fun and you can help each other
- Have a dive plan: plan the dive, dive the plan
- Surface cover: have someone watching you at all times whether it is from the shore or a boat
- Always respect and protect the environment.

Review of basic skills

Lesson objectives

The main objective of this lesson is to introduce, and in some cases review, the basic skills of students who have graduated from Experience Snorkelling, have snorkelled with a different organisation or have snorkelled in different water conditions to those being used on this course.

The introduction and review of basic skills is not an aspect to be rushed, as confidence building will be relative to individual students as well as any previous in-water experiences.

Achievement targets

At the end of this session students should:

- Demonstrate their in-water confidence by a swimming assessment comprising a 50m swim. This is not a timed swim as adequate in-water confidence is more important than speed or swimming technique

  (Note: This assessment can be undertaken in a later session at the discretion of the instructor)
- Be aware of how breathing in and out affects buoyancy
- Be competent and confident in correctly fitting a face mask
- Be competent and confident clearing a mask on the surface without removal
- Be competent and confident clearing a fogged up mask on the surface without removal
- Be competent and confident clearing a snorkel using ‘blow’ technique
- Be competent and confident finning forwards, stopping and turning around whilst breathing from a snorkel
- Be competent and confident finning forwards using different arm positions
- Have understood ‘OK’, ‘Up’, ‘Down’, ‘You’, ‘Me’ and ‘Stop’ signals
- Have started to become familiar with the buddy system.

Lesson contents

Basic equipment should be prepared/checked by the instructor with students at a 'fitting' session prior to the commencement of the session and placed where it will be accessible from shallow water. During the fitting session remind students of the key features of the fins, mask and snorkel. If thermal protection and buoyancy aids are being used, include them in the 'fitting' session and make a buoyancy check before starting the lesson. If running the session where sun protection is necessary, ensure students have suitable protection, eg t-shirt, sunscreen, appropriate head protection.

1. Briefing

Explain the above objectives to the students and emphasise how less haste at this point will mean more speed overall. Stress the importance of stopping and standing up if they have a problem. Cover all elements of a SEEDS brief including 'OK', 'Up', 'Down', 'You', 'Me' 'Stop' and 'I have a problem' signals, together with any 'instructional' signals you will be using.

2. Swimming assessment

This assessment is for students to show their in-water confidence by swimming 50m without mask, fins or snorkel. This is not a timed swim as an adequate level of in-water confidence is more important than speed or swimming technique (see note above).

3. Entry into shallow water – fitting fins

Depending on the venue and the type of entry, decide whether it is easier to fit fins before or after entry.

- Demonstrate how to fit fins while sitting by the water, on steps, or fit in the water supported by holding a buddy or suitable fixed object for support.
- Whether fitting fins in or out of the water, demonstrate how to walk safely with fins, either backwards or sideways.
- Demonstrate an entry using steps/ladder or wading into waist deep water – remember the golden rule, instructor first in.

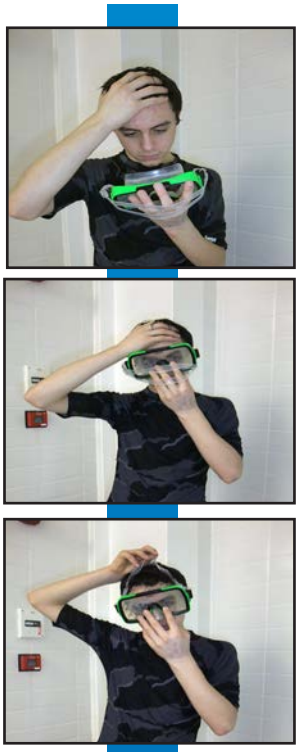
4. Buoyancy check

Move into slightly deeper and demonstrate:

- Hold lightly on to a buddy or fixed object for support and position the body so it is upright in the water with fins pointing down.
- Breathe normally and maintain a position where the whole face is kept above the surface. Students should notice a small rise and fall in their position as they breathe in and out. If necessary, use a very gentle flutter kick to maintain position.
- Repeat the above but this time students should breathe out more deeply so that they sink just below the surface to then resurface.

(This check is important if training includes the use of suits so that appropriate weighting/buoyancy aids considerations can be addressed.)

5. Fit and check mask seal – standing depth



- Demonstrate how to demist a mask with saliva or demist solution and rinse out (depending on the venue this can be done prior to entry).
- Demonstrate how to correctly position a mask on the face, and remind students that once the mask is on they will need to breathe in and out through their mouth:
  - Wet the face with a little water and clear any hair from the face, particularly the forehead.
  - Hold the mask in one hand with the strap placed in front of the mask.
  - Check the mask seal is clear and place the mask on the face.
  - Still holding the mask with one hand, draw the strap over the head. Demonstrate that positioning of the strap is centred on the back of the head, not too high or too low,
  - Check that hair is not trapped under the seal, the strap is positioned correctly and is just tight enough to hold the mask in position – involve students in this check as part of being a buddy.
- Demonstrate how to check the mask seal for leaks:
  - Take a breath, bend forwards and submerge the face and mask in water, straighten up and show there is no water in the mask.

  When students do this it helps their balance to either hold onto a buddy or suitable fixed object for support, before taking a breath, bending forward and submerging the face.

  Quite often at this stage, some water may enter the mask so check its fitting. Also, the mask may begin to fog up so check students are not still trying to breathe through the nose.
- Demonstrate how to clear water from the mask:
  - Stand up (if necessary hold onto a buddy or suitable fixed object for support).
  - Bend forward so the face is submerged and, with one hand, gently ease the bottom of mask seal to allow a little water to enter.
  - Stand up, hold the frame at the side of the mask with one hand, tilt the head slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face to break the seal and allows any water to simply drain away before the mask is re-sealed to the face.
- Demonstrate how to clear a fogged up mask:
  - Stand up (if necessary hold onto a buddy or suitable fixed object for support).
  - Bend forward so the face is submerged and, with one hand, gently ease the bottom of mask seal to allow a little water to enter.
  - Stand up, but bend forwards so the mask lens is horizontal to the water, and swish the water around inside the mask to remove the fog.
  - Stand up, hold frame at side of mask with one hand, tilt head slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face to break the seal and allows any water to simply drain away before the mask is re-sealed to the face.

6. Fit snorkel and practice with mask and snorkel – introduce 'OK' and 'Up' signals

- Demonstrate how to secure the snorkel to give comfortable alignment. Remind students that once the snorkel is in the mouth it is difficult to talk both on the surface and underwater – introduce the 'OK' and 'Up' signals for the following demonstrations.
  - For snorkels where there is no mask clip attachment, slide the snorkel under the mask strap to one side of the face and position it so the mouthpiece is easily accessible. Adjust snorkels that are already fitted to the mask strap so the mouthpiece is easily accessible.
  - Check the snorkel position to give comfortable alignment and, with the mouthpiece in, allow students to get used to breathing in and out on the surface through the snorkel before the next step.

- Review and demonstrate breathing through snorkel with face submerged, static:
  - Give the 'OK' signal and ensure there is a response, then bend forwards to submerge the face. Count each 'breath out' on the fingers of one hand held out of the water, to demonstrate a comfortable breathing rhythm – generally four to five cycles. Students repeat, holding a buddy or suitable fixed object for support. Check each student in turn and give an underwater 'OK' signal, and then an 'Up' signal when four/five breathing cycles are completed.
  - Demonstrate breathing through snorkel, lying forwards on the surface, face submerged. When the students repeat, it can be done as a group with 'OK' signals being given and responded to underwater. Use the 'Up' signal to end this step.
  - Repeat breathing through snorkel lying forwards on surface but this time demonstrate how deeper breathing in and out slightly affects buoyancy – students should notice a rise and fall of their static in-water position.

7. Snorkel clearing using blow method - static

- Demonstrate blow method of snorkel clearing:
  - Start in a standing or kneeling position and place one hand gently at the top of snorkel (not covering the hole).
  - Take a breath and while bending forwards also bend the knees to submerge the head until the hand is covered, so that the snorkel floods.
  - Stand/kneel up and tip the head back slightly, then breathe out forcibly to expel water and continue breathing through the snorkel.
  - Demonstrate the above but this time lying on the surface.

The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves usually require less effort to clear, but using this technique will help students should their drain valve be ineffective.

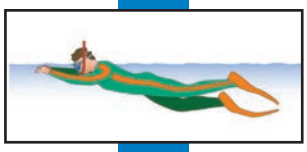
8. Finning action - static

- Review and demonstrate finning action:
  - To demonstrate the efficiency of legs and finning action, sit the students, supported by their arms, on waterside, steps or supported in waist deep water with legs forward and unobstructed. Tell the students to make exaggerated cycling movements. They will soon experience, after much splashing, that it is not an efficient use of fins and quite hard work! In the same position get students to straighten their legs and fins, use a gentle rolling action from the hips, flexing the legs slightly for more efficient fin use.

- Lie on the surface, face down, breathing through the snorkel, hold onto a buddy or suitable fixed object for support and demonstrate a gentle roll action from the hips, flexing the legs slightly for efficient finning action. Explain that this action is called a 'flutter kick', and that using it makes sure that the movement is from the whole leg.
- After the static finning demonstration show how to stand up with fins on by turning over and standing up backwards.

9. Finning action - moving

- In waist deep water, using mask and snorkel, demonstrate:
  - Fin forwards using an 'up/down' smooth leg action, arms forward
  - Stop, and using your hands as paddles turn around and fin back to the start point.

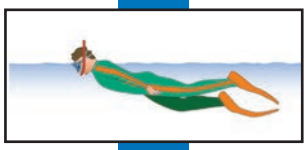


Remind students that as well as looking down to see what is underwater they must also look ahead on the surface to see where they are going and avoid other snorkellers/water users.

Maintain control of the group so they do not, at this stage, fin into deeper water. Have them fin in a straight line with clearly defined turn around points or in a circle in front of the instructor.

10. Finning with arms in different positions

- In waist deep water, using mask and snorkel, demonstrate:
  - Fin forwards with the arms held at the side of the body
  - Fin forwards with the hands placed in the small of the back



Remind students that 'streamlining' the body as much as possible makes moving through the water much easier – think fish!

11. Finning at different speeds

- In waist deep water, using mask and snorkel demonstrate:
  - Fin forwards at a gentle pace – arm position optional
  - Fin forwards at a medium pace – arm position optional
  - Fin forwards at a fast pace – arm position optional

12. Finning session – working as buddy pairs

Pair up the students, remind them of the 'OK' signal and allow them to snorkel together.

13. Exit water

Remember the golden rule – instructor last out.

Depending on the venue and the type of entry, decide whether it is easier to remove fins before or after exit. If removing fins in-water, ensure students hold a buddy or suitable fixed object for support. Whether removing fins in or out of water, demonstrate how to walk safely with fins, either backwards or sideways.

14. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their first lesson and highlight the areas of progress they have made.

Kit care

Whether it is loaned kit or the students' own kit remind or, depending on the venue, wash kit prior to storage.

Skills Performance Standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Swimming assessment** - Students should demonstrate their in-water confidence by a swimming assessment comprising a 50m swim. Timing and swimming technique are not important.
- **Correctly fitting a face mask –** clear the face of hair and place the mask so that it is comfortable with the strap centered on the back of the head.
- **Clearing a mask on the surface without removal** –allow some water into the mask, tip the head back, and ease the mask seal to allow water to drain out before the mask re-seals on the face.
- **Clearing a fogged up mask on the surface without removal** – allow some water into the mask and, with the mask lens horizontal to the water surface, swill water around to clear the 'fog' and then clear the mask as above.
- **Clearing a snorkel using 'blow' technique** – allow some water into the snorkel, tip the head back slightly, breathe out forcibly to expel water and continue breathing through the snorkel.
- **Finning forwards, stopping and turning around whilst breathing from a snorkel** – with good finning action move forwards whilst breathing from a snorkel
- **Finning forwards using different arm positions** – using good finning action using different arm positions.

Developing finning techniques

Lesson objectives

The main objective of this lesson is to introduce different finning techniques and explain why different circumstances may dictate a particular technique. Introducing side and backwards finning together with front crawl finning is also a preparation for rescue work later in the course.

Wearing mask and snorkel is assumed unless otherwise indicated.

Achievement targets

At the end of this lesson students should:

- Be confident and competent in fitting mask, fins and snorkel
- Be confident and competent in using a different entry to that used in Lesson 1
- Be confident and competent finning forwards face down breathing from snorkel, turning around and finning back to the start point as a buddy pair
- Be confident and competent finning backwards, turning around and finning back to the start point as a buddy pair
- Be confident and competent finning sideways, turning around and finning back to the start point as a buddy pair
- Be comfortable finning forwards using 'in and out' technique turning around and finning back to the start point as a buddy pair
- Be confident and competent finning forwards while using a crawl stroke with the arms
- Be confident and competent in using a different exit to that used in Lesson 1

Lesson contents

Equipment should be prepared/checked by the instructor with students prior to the commencement of the session. If running the session where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen.

1. Briefing

Explain that this lesson is going to introduce students to different finning techniques and why snorkellers can use them. Cover all elements of a SEEDS brief.

2. Entry into shallow water

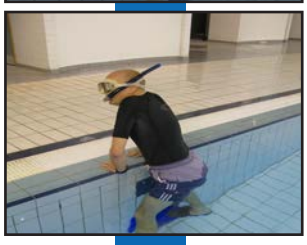
Depending on the venue, use an entry where mask, fins and snorkel are fitted prior to water entry such as a silent entry, where water is of unknown depth or a walking backwards entry from a shelving shore.

Demonstrate the use of the 'figure four' principle to put on fins: hold onto buddy or fixed object with right hand and hold fin in left hand. Lift and cross right leg over standing leg and fit fin. Repeat using left hand to hold support and right hand to fit fin to left foot.. Demonstrate preparing and fitting mask and snorkel, using the buddy as support.

- Silent entry (also known as a 'slide' entry):

  Explain that if there are no other means of entry, such as walking into the water or a ladder, this entry is used when the depth of water is unknown. Moving slowly and carefully means that it will be your fins that will find contact with anything underwater first.

  - In sitting position with mask and snorkel in place and fins in or just over the water (suggested depth is standing depth for students), demonstrate how to place both hands to one side of the body on the edge of the pool, platform or jetty.
  - Using the arms as support, lift and turn the body away from the water, then gently lower the whole body down into the water whilst still holding on to the pool, platform or jetty.

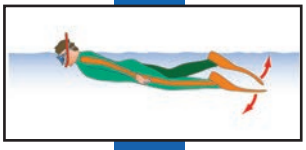


  - Give an 'OK' signal when the entry is complete.

- Backwards entry from shelving shore:
  - With mask, snorkel and fins in place and using the buddy as support, carefully walk backwards into the water.

3. Finning techniques

- Forward flutter kick:
  - Review and demonstrate finning forwards using a flutter kick action, hands held together behind the back to allow it to arch slightly as it lifts the head making it easier to look around on the surface (to avoid collisions with others) as well as underwater. Circle around using fins only, then fin back to the start point.



  - When students repeat put them into buddy pairs so they work together.
- Backwards flutter kick:

  Explain that this kick enables snorkellers to fin face up rather than face down..

  - Demonstrate by lying back on surface, either removing the snorkel or keeping the head forward so the snorkel does not submerge. Begin to fin backwards, turning every so often to check for obstructions.
  - When students repeat put them into buddy pairs so they work together.

Sideways flutter kick:

Explain to students that this is a good technique to use when going over corals or shallow underwater features as the water disturbance is less than that created by the 'up/down' flutter kick, and it also avoids risk of fins touching or disturbing marine life. The finning action is the same as the forwards and backwards action but, because the body is sideways on, the finning action is sideways on as well!

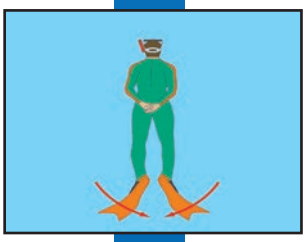
- Demonstrate by lying on the surface on one side, either removing the snorkel or keeping the head up so the snorkel does not submerge. Stretch one arm out in the direction of travel and start to fin looking ahead and checking for obstructions.
- When students repeat put them into buddy pairs, facing each other during the exercise.

- On the spot – slow snorkelling moves:

As snorkelling is a sport that allows us to see underwater, there will be many times when just floating on the surface and watching what is below is all that is needed. However, there are times when snorkellers need to move only a little to either remain over the point of interest or move slowly whilst watching a marine creature and not scare or disturb it.

- Staying in position using arms or fins to move a little

- Over a fixed point or object placed on the bottom, demonstrate how to move forwards and backward as well as turning slowly just using the arms and hands as 'paddles'.
- As well as using fins in a slow flutter kick, demonstrate the 'in and out' fin technique, which causes little water disturbance, whilst lying forward on the surface.
  - Demonstrate lying on surface, keep the legs straight.
  - For the first fin stroke push legs and fins outwards away from each other.
  - For the second fin stroke, with another push against the water, bring the legs/fins back together.
  - Repeat the sequence to show how the 'in and out' fin technique will move a snorkeller gently forwards.



- Students repeat

- Finning using crawl stroke for arms:
  - Demonstrate how to increase the speed of forward finning by using the arms in an overarm crawl stroke. Remind students that increasing speed also requires a careful lookout to avoid collisions.
  - Students repeat

- Snorkel swim in buddy pairs:

Put students in buddy pairs and allow a 'free snorkelling' session. Urge students to use signals rather than talking, (ie keep snorkels in the mouth), and constantly monitor their surroundings to prevent collisions with other buddy pairs.

For younger students this session can become a game with the instructor calling out which fin stroke to use (like Simon says!).

Exit water

Depending on the venue, use an exit where mask, fins and snorkel are removed after exit such as finning out of water onto edge of the pool, platform or jetty, or

make a backwards exit onto a shelving shore.

- Fin Exit:

  Demonstrate a fin exit starting in standing depth. Face and place both hands on the side of the pool, platform or jetty, bend down, and using a spring from the legs and then a fin kick, lift the body out of water so it is supported forwards on the arms. Roll to one side to end up in a sitting position.

- Shore Exit:
  Demonstrate a walking backwards exit from a shelving shore, with buddies using each other for support if necessary.
- Demonstrate removal of fins, either sitting or standing with buddy support.

4. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their lesson and highlight the areas of progress they have made.

5. Kit care

Whether it is loaned kit or the students' own kit, remind or, depending on the venue, wash kit prior to storage

Skills performance standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Fitting mask, fins and snorkel** – fit mask so no hair in seal and strap centred at back of head, fit fins using buddy for support, adjust straps to tighten if applicable, fit snorkel in snorkel fitting on mask strap or slide under mask strap, snorkel mouthpiece positioned so easily accessible
- **Using a different entry to that used in Lesson 1** – student succeeds in mimicking entry demonstrated by instructor
- **Fin forwards face down breathing from snorkel** – using efficient forward finning stroke to move on set course, turn and return to start point, working as part of a buddy pair
- **Fin backwards, turn around and return to start point** – using efficient backward finning stroke to move on set course, turn and return to start point. Snorkel clear of water, check made on direction heading, working as part of buddy pair
- **Fin sideways** – using efficient sideways finning stroke to move on set course, turn and return to start point. Snorkel clear of water, one arm pointing in direction of travel, check made on direction heading, working as part of buddy pair.
- **Fin forwards using a crawl stroke with the arms** – using efficient forward finning stroke and crawl stroke with arms, move on set course, turn and return to start point. Check made every so often on direction, working as part of buddy pair.
- **Using a different exit to that used in Lesson 1** – student succeeds in mimicking exit demonstrated by instructor

Mask and snorkel clearing and head first surface dives

Lesson objectives

The main objectives of this lesson are to introduce students to finning in deeper water, and to head first surface dives (also known as 'duck dives'). As preparation for the surface dives and to build confidence and a higher level of skill in snorkel and mask clearing, it is advisable to work in shallow water first before moving to deeper water to teach the duck dive.

Achievement targets

At the end of this session students should:

- Be confident using either a 'surf' sideways shore entry or, if deep water is available, a stride entry
- Be confident and competent clearing a part filled mask on the surface
- Be confident and competent clearing a part filled mask underwater
- Be confident and competent clearing a snorkel using 'displacement' technique
- Be confident and competent finning in deeper water
- Understand the importance of being able to clear ears before surface dives and action to take to equalize mask
- Be confident in head first surface dives

Lesson contents

Equipment should be prepared/checked by the instructor with students prior to the commencement of the lesson. If running the lesson where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen.

1. Briefing

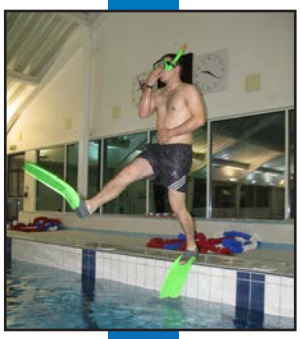
Explain that this lesson is going to cover snorkelling in deeper water and, because snorkellers may want to get closer to look at something underwater, learning how to do head first surface dives.

Cover all elements of a SEEDS brief. It is extremely important to check whether students can clear their ears to allow them to surface dive. It is also advisable to check who is wearing contact lenses as mask clearing is involved in this lesson.

2. Entry into deeper water

Depending on location, use an entry where mask, fins and snorkel are fitted prior to water entry. This could be a stride entry if water depth is sufficient for the height of the student, or a 'surf sideways' entry from a shelving shore.

Buddy up students and get them to assist each other if necessary and do a buddy check.



- Stride entry

  Demonstrate stride entry (this simulates an entry from a large boat which students may well use in the future).

  - Stand on the side of pool, platform or jetty facing the water with your toes just over the edge.
  - Check that your entry point into the water is clear, then secure mask and snorkel with one hand. Look straight ahead and lift one leg forwards, take a large stride out and enter the water safely away from the edge of pool, platform or jetty.
  - On surfacing, turn to face the entry point and give an 'OK' signal (unless you are not OK). If waiting for a buddy to enter, ensure the entry point is clear.
  - When students copy, give them clear directions - an 'OK' signal and response and a verbal 'Go' from the instructor.

- 'Surf sideways' entry from shelving shore:

Explain that entering the water with surf breaking on the shore should not be done if the surf is high. However, some shorelines always have a surf line and once through this, the calmer water beyond is safe for snorkelling. The sideways entry presents less body resistance to the waves than a backwards entry.

  - Demonstrate a walk sideways into water with fins, mask and snorkel in place. Use a buddy for support if necessary.

3. Finning in deeper water

As students may have entered deeper water on the stride entry, direct buddy pairs to fin on a designated course to shallower, standing depth water.

4. Mask clearing on the surface

- Demonstrate how to clear water from the mask:
  - Stand up (if necessary use a buddy or suitable fixed object for support).
  - Bend forward so the face is in the water, then with one hand gently ease the bottom of the mask seal to allow a little water to enter.

- Stand up, hold the frame at the side of the mask with one hand, tilt the head slightly back and, at the same time, gently ease the bottom of the mask seal so it just lifts off the face allowing any water to simply drain away.

5. Mask clearing underwater

- Demonstrate initial clear:
  - On the surface, in standing depth, hold the side of the mask with one hand. Tilt the head back and gently breathe out through nose. Students should feel their mask lift slightly away from the face. Explain that if they feel 'mask squeeze' underwater this is all they need to do to resolve it. The next step uses the same principle to clear the mask of any water ingress.
  - Hold a buddy or suitable fixed object for support and crouch or kneel down so the mask is submerged just below the surface, but the snorkel is not.
  - Lift the side skirt of mask from face to allow a small amount of water to enter.

  - Hold the side of the mask with one hand. Tilt the head back and breathe out through nose to dispel water as the mask is eased slightly away from face to break the seal at bottom of mask.
  - Replace the seal and stand up.
- Demonstrate progressive flood:
  - Repeat as for the initial clear, but lifting the mask skirt off the face to allow an increasing amount of water to enter to half fill mask.

The above technique may need adapting depending upon the style of mask used although the progressive sequence will remain the same. Masks fitted with drain valves will require the head to be slightly tilted forward rather than back.

6. Recap snorkel clearing using blow method - static

- Demonstrate blow method of snorkel clearing:
  - Start in just deeper than standing depth water.
  - Lie on the surface and tilt the body from the waist so the head is underwater and the snorkel fills.
  - Surface, tip the head back slightly, and forcibly exhale to expel water from the snorkel, and then continue breathing through it.

The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves will require less effort to clear but learning this technique will help students should the drain valve not be effective.

7. Snorkel clearing using displacement technique

- Demonstrate displacement clearing:
  - Drop down below surface so the snorkel is submerged. Look up at surface, tilt the head back so the snorkel end is lower than the mouthpiece and gently blow to clear water before standing up.

When displacement clearing, snorkels fitted with drain valves will clear via the drain valve rather than the tube but tilting the head back still helps with water displacement, and looking up before surfacing is a safety action students will use on surface dives.

8. Head first surface dive

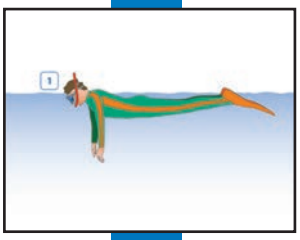
Check that students can clear their ears and can breathe out a little through their noses for mask equalization.

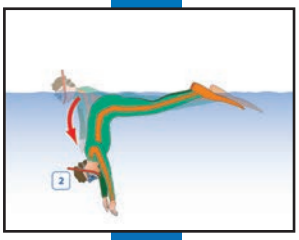
Remind students

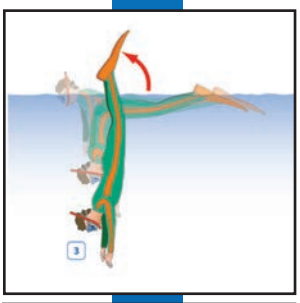
- to breathe normally and not to take more than three breaths before diving, to avoid hyperventilation
- the importance of the 'one up, one down' principle.

Work just out of student standing depth so they can dive safely. It is a good idea to place or locate something on the bottom so that students have a focal point they can aim for when learning this dive.

Surface dives use the weight of the body to push the diver down and reduce effort and waste of energy. If using snorkeling buoyancy jackets, release any air in them prior to these dives.







- Demonstrate initial diving preparation position:
  - Lie on the surface face down with your body stretched out.
  - Take your arms and hands down so they form a 90° angle to the body and point to a focal point on the bottom of pool/seabed.
  - Bend downwards from the waist towards arms so the upper body and arms form a 90° angle to legs.
  - Surface and clear your snorkel. Repeat so students become comfortable with this initial position.
- Demonstrate diving position/handstand/ear and mask equalisation and surfacing procedure:
  - Fin forwards gently, with the focal point on the bottom of the pool/seabed slightly ahead rather then directly underneath student. Repeat as above but when the upper body and arms are at a 90° angle to legs, use the momentum of bending at the waist to lift the legs and fins straight up and out of the water and drop down to almost a handstand at the focal point on the bottom of pool/seabed. Pinch your nose to indicate ear clearing. (To help with leg and fin position, get students to imagine a whale's tail fin, sleek and with no splashing as the whale sinks below the surface).
  - Gently fin forwards out of the handstand and demonstrate ear equalization by pinching the nose pocket on your mask, hold one arm above your head ('Superman position'), look up to ensure it is clear to surface (which means your head is tipped back and in the right position to clear the snorkel using the displacement technique). If there is enough depth, turn 180° on ascent whilst looking at surface.
  - Surface and give an OK signal.

When students repeat remember to let them regain breath control before attempting subsequent dives.

9. Students free snorkelling session

Get the students to work in buddy pairs practising finning and head first surface dives.

10. Exit water

Depending on location, use an exit where mask, fins and snorkel are not removed until out of the water.

- Deep water exit:

  Demonstrate this in out of depth water. Place both hands on the side of the pool, platform or jetty, bounce up and down to get momentum and on the final bounce fin to lift your body from water so it is supported on the arms. Roll to one side to finish sitting on the side of the pool, platform or jetty. Remove fins, mask and snorkel.

  If the poolside, platform or jetty is too high above water for students to fin up and support themselves on their arms, demonstrate as above but as your body lifts from the water bend over the poolside, platform or jetty and roll/ease into a sitting position.

- 'Surf sideways' exit onto shelving shore:

  Demonstrate the exit by walking sideways out of the water still wearing fins, mask and snorkel, using a buddy for support if necessary. The sideways exit presents less resistance to the waves than a backwards exit. Remove fins, mask and snorkel.

9. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their lesson and highlight the areas of progress they have made.

10. Equipment care

Depending on the session venue, the equipment care exercise could be done before the debrief to highlight the need to take care of equipment.

- Equipment should be washed in fresh water and all items stowed away.

Skills Performance Standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Clear a part filled mask on the surface –** allow a little water into mask, place hand on mask, tip head back, use hand to ease mask seal to allow water to drain away, allow mask to reseal to face
- **Clear a part filled mask underwater –** just below surface allow a little water into mask, place hand on mask, tip head back, breathe out through nose and, at same time, use hand to ease mask seal, when water dispelled allow mask to reseal to face
- **Clear a snorkel using 'displacement' technique -** drop down below surface so snorkel is submerged, look up at surface, tilt head back so snorkel end is lower than mouthpiece and gently blow to clear water before standing up
- **Finning in deeper water –** use efficient finning technique in deeper water and not be concerned about being out of depth

Snorkelling and diving in deeper water and buddy rescue

Lesson objectives

The main objectives of this lesson are to extend students' skills already learnt, learn a feet first surface dive, and learn how to tow a buddy to safety should a problem arise when snorkelling.

Achievement targets

At the end of this lesson students should:

- Be confident and competent doing a head first surface dive
- Be confident and competent recovering an article from the bottom
- Be confident and competent doing a feet first surface dive
- Be confident towing a conscious buddy to safety

Lesson contents

Equipment should be prepared/checked by the instructor with students prior to the commencement of the lesson. If running the lesson where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen.

1. Briefing

Explain that this lesson is going to cover snorkelling in deeper water and learning an alternative surface dive. Also, the lesson will cover how to get a buddy to safety as quickly as possible should they have a problem while snorkelling, such as cramp or tiredness.

Cover all elements of a SEEDS brief and, as surface dives are planned, check students can clear their ears because they will be experiencing pressure on their ears and mask.

2. Kit up and buddy check

If water depth is sufficient for the height of the students use an entry where mask, fins and snorkel are fitted prior to water entry, such as a forward roll entry. Otherwise use a walk in entry, where mask and snorkel are worn but fins are fitted in water after the entry.

Buddy up students and get them to assist each other, if necessary, and do a buddy check.

3. Entry into deeper water

- Forwards roll entry

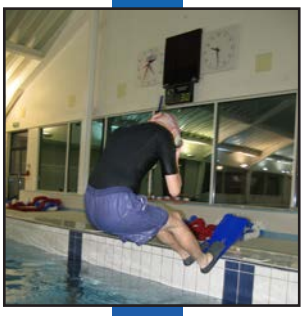
This entry is useful when carrying something, such as an underwater camera.

Demonstrate a forwards roll entry:

- Stand on the side of the pool, platform or jetty (this simulates an entry from a large boat, which students may well use in the future). Face the water with fins together and toes just over the edge.
- Check that the entry point into the water is clear, bend forward and place your hands either behind your knees or across your chest (protecting the 'camera').
- Tuck your head in by looking down at your knees (not where you are going!) and roll forward into water.
- Complete the roll in the water to regain an upright position; clear your snorkel, then give an 'OK signal.

- Backwards roll entry.

Demonstrate a backwards roll entry. This simulates an entry from a small boat such as an inflatable or RIB, with the crouch position representing how you would be sitting on the tubes or gunwale of the boat.



- Stand at the edge of the pool, platform or jetty facing away from the water. Check that the entry point is clear.
- Hold the mask and snorkel to your face with one hand, with the other hand on your mask strap at back of the head.
- Bend the knees so your body is in a crouching position, and roll backwards into the water.
    - On surfacing, clear the snorkel and give an 'OK' signal.

When students repeat, ensure they have support when in the crouch position.

and give a clear 'go' for entry. Explain that this would be what the driver of the boat would do as only they, not the snorkellers, can see whether it is safe for entry.

- Walk in entry from shelving shore
    - o Demonstrate a walk in entry with mask and snorkel fitted but holding fins. Use a buddy as support if necessary.
    - o Fit fins in water using figure of four technique supported by buddy

    Explain that this method may be easier when the entry is over rough ground that would be difficult to walk on wearing fins.

4. Head first surface dive

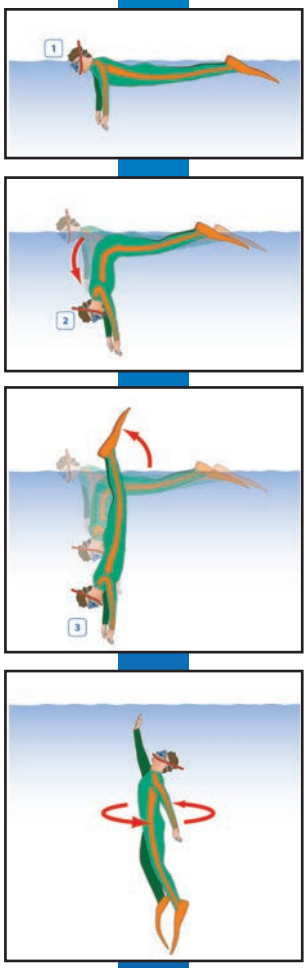
Confirm that students can clear their ears and can breathe out a little through the nose for mask equalization.

Remind students about:

- breathing normally and not taking more than three breaths before diving, to avoid hyperventilation
- the importance of the 'one up, one down' principle.

- Demonstrate/recap head first surface dive
    - o Fin forwards gently and with the focal point on the bottom of the pool/seabed slightly ahead rather then directly underneath, take your arms and hands down so they form a 90° angle to the body and point to the focal point.
    - o Bend downwards from the waist towards the arms so the upper body and arms form a 90° angle to legs. Use the momentum of bending at the waist to lift the legs and fins straight up and out of the water, and drop down to almost a handstand on the focal point on bottom.
    - o Fin forwards out of the handstand on the bottom. Demonstrate ear equalization by pinching the nose piece of the mask, and when ready to surface, hold one arm above your head ('Superman position'). Look up to ensure it is clear to surface (this tips the head back into the right position to clear the snorkel using the displacement technique). Turn 180° on ascent if there is enough depth.
    - o Surface and give OK signal

    When students repeat remember to let them regain breath control before attempting subsequent dives.

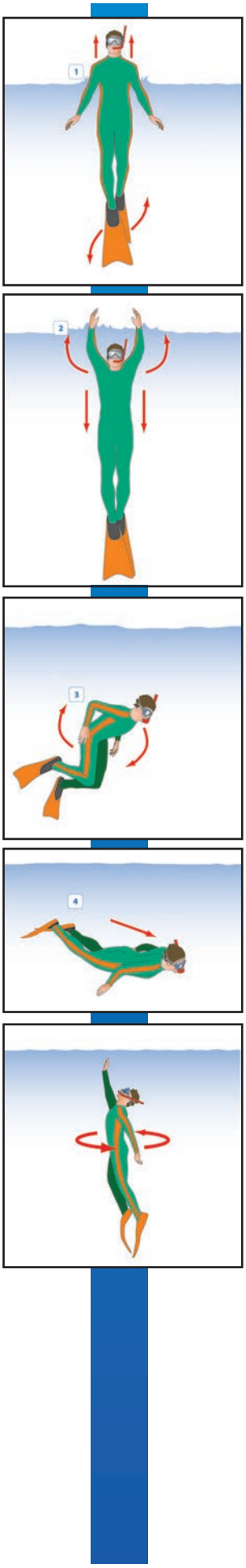


5. Recovery of underwater object

Explain to students that dives underwater can also be used to recover 'lost' objects, such as someone's mask or snorkel.

- Demonstrate, using a mask or snorkel as the object to recover - make a head first surface dive to recover an item and get the students to repeat.

6. Feet first surface dives in deeper water – optional (sheltered water being used may not be sufficiently deep)



Although the head first dive is probably the most preferred method of diving, the feet first dive can also be used.

- Initial position
  - o Demonstrate how to begin this dive by starting in an upright, vertical floating position.
  - o Fin gently to maintain an upright position and extend the arms to either side of your body. Start to fin forcefully so your body lifts upwards out of water. Stop finning and let your body fall back to the starting position.
  - o Repeat a couple of times.
- Dive position
  - o Repeat the above, but when the body lifts out of the water, put your arms above your head, stop finning and bring the legs together with fins pointing down. Allow your whole body to sink and drop below the surface (like a missile).
  - o Once under water, hold the body position but sweep your arms sideways and upwards using the hands to force the body further down,
  - o Tuck the body and then extend it and fin forwards or further down. Demonstrate equalization by pinching the nose piece of the mask.
  - o Ascend using the 'Superman' position, and clear your snorkel using the displacement technique. If there is enough depth turn 180° on the ascent.
  - o Surface and give an 'OK' signal.

When students repeat remember to let them regain breath control before attempting subsequent dives.

7. Students free snorkelling session

Tell the students to work in buddy pairs and agree who is diving and who acting as surface cover each time using the 'one up, one down' principle. They should use both types of surface dive.

8. Buddy rescue

- Action for cramp

  Demonstrate the action for in water cramp

  Tell the casualty to relax and lie on his/her back. If the casualty has sufficient buoyancy (or buoyancy can be increased using a snorkel vest) the rescuer takes hold of the affected leg by the fin and gently pushes the fin tip back towards the casualty so that the calf is stretched. If the casualty cannot maintain comfortable buoyancy, tow to a point of support or ask for in-water assistance before trying to relieve the cramp.

- Rescue

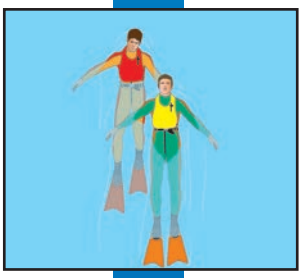
  Using a volunteer 'casualty' set up a scenario where the buddy fins some distance away (about 10m), gets very tired and gives a distress signal.

  Demonstrate the rescue:

  - When the buddy 'complains', make firm contact and tell him/her to stay calm and to relax by lying back on the surface.
  - When casualty is in position (if he/she is wearing a snorkel vest add some air for additional buoyancy) maintain a firm grip and tow him/her to the nearest point of safety (shore, jetty, pier, poolside or boat).
  - Once the point of safety has been reached, ensure a firm grip on the casualty is maintained and ask for assistance so that under your guidance, the casualty can be removed from the water.

  The method of towing will vary depending on what the 'casualty' is wearing: a snorkel vest can be held at the back and a long arm tow used whilst finning backward. If the casualty is in a thin suit or T-shirt, the hold could be under one arm whilst finning backwards or sideways.

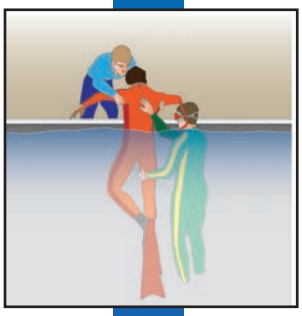
  After students have repeated the rescue ask them what could have prevented this rescue in the first place. The answers should include avoiding fatigue by not over-exerting and avoiding cramp by regular fluid intake.

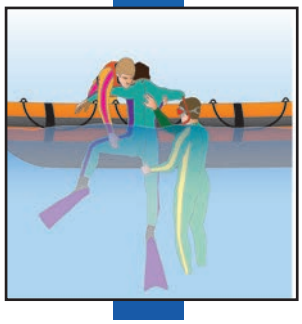


9. Distance rescue

Using a volunteer 'casualty' set the scenario that this time the buddy has finned away some distance (approximately 10m), got exhausted, and has given a distress signal.

- Demonstrate the rescue:
  - Acknowledge the signal and tell the casualty you are on way and to stay calm. Fin towards the casualty as quickly as you can using an overarm 'crawl' stroke, keeping casualty in view all the time.
  - On reaching the casualty make a firm contact and tell him/her to stay calm and relax by lying back on the surface.
  - When casualty is in position (if he/she is wearing a snorkel vest add some air for additional buoyancy) maintain a firm grip and tow to the nearest point of safety (shore, jetty, pier, poolside or boat).
  - Once the point of safety has been reached, maintain a firm grip on the casualty and ask for assistance so that under your guidance, the casualty can be removed from the water.
  - The method of towing will vary depending on what the 'casualty' is wearing: a snorkel vest can be held at the back and a long arm tow used whilst finning backward. If the casualty is in a thin suit or T-shirt, the hold could





be under one arm whilst finning backwards or sideways.

After students have repeated rescue, ask them what could have prevented this rescue in the first place. Draw out the observation that the buddy pair were too far apart in the first place; staying together as a buddy pair means that if one gets into trouble, rescue is much closer to hand.

10. Exit water

Depending on location, use a deep-water ladder exit or shore exit when fins are removed in water

- Deep water exit using ladder

  In out of depth water, demonstrate a ladder exit:

  - Hold the ladder with one hand and remove your fins to pass up to the surface cover.
  - Climb the ladder using keeping three points of contact at all times. Once at the top clear the exit point for others to use.
  - Emphasise that snorkellers waiting to use the ladder need to remain clear of the bottom of the ladder in case the person climbing up slips and falls: wait until the climber has cleared top of the ladder before approaching it.

11. Debrief

Using the 'REAP' format, make sure that everyone has enjoyed their lesson and highlight the areas of progress they have made.

12. Equipment care

Depending on the session venue, this exercise may be done before the debrief but in any event underline the need to take care of equipment.

- Wash equipment in fresh water and stow all items away.

Skills Performance Standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Head first surface dive** – in buddy pair, one up one down, bend 90° at waist, legs and fins lifted into handstand position, fin out from handstand position on bottom, surface using Superman position, displacement clear of snorkel, OK at surface to buddy
- **Feet first surface dive –** in buddy pair, one up one down, fit upwards and lift arms above head, stop finning and drop down under surface, roll out and fin out on bottom, surface using Superman position, displacement clear of snorkel, OK at surface to buddy
- **Recovery of underwater object –** in buddy pair, use head first surface dive as above, retrieve object from bottom and recover to surface

Snorkelling in a buddy pair and buddy rescue

Session objectives

The main objectives of this session are to assess students' skills in agreeing a snorkel dive plan, for each buddy to lead a dive and to assess each student in rescuing a conscious buddy and towing them to a point of safety.

Achievement targets

At the end of this lesson students should:

- Be confident and competent planning and leading a snorkel dive
- Be confident and competent towing a conscious buddy to safety

Lesson contents

Equipment should be prepared/checked by the instructor with the students prior to the commencement of the lesson. If running the lesson where sun protection is necessary, ensure students have suitable protection, egs t-shirt, sunscreen, head protection.

Briefing

Cover all elements of SEEDS in the instructor brief and, as surface dives are probably going to be planned, check students can clear their ears as they will be experiencing pressure on the ears and mask.

Explain that this lesson is going to give each student the opportunity to plan and lead a short snorkel dive. Give a time allowance for each dive, from a brief to debrief. Before the Kit Up and Buddy Check stage, students must ensure they check in with the surface cover and confirm their time of exit from the water.

Skills Performance Standards
For the snorkel dive, students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced, whilst acting as snorkel dive leader

1. **Snorkel dive**
    - **Plan and brief**

      Within the constraints of time, depth and location set by the instructor, students establish a snorkel dive plan and confirm this in their brief using SEEDS
    - **Kit up & buddy check**

      Students should assist their buddy to kit up and then conduct a buddy check
    - **Entry**

      Students should choose an entry suitable for the depth of water, leader in first
    - **Snorkelling and dives**

      Students should monitor buddy, show awareness of other water users, follow ‘one up one down’ when surface diving
    - **Exit**

      Students should choose an exit suitable for depth of water, leader out last
    - **Debrief**

      Students should review the dive, anything to improve
2. **Skills Performance Standards for distance rescue of conscious buddy and tow to point of safety**

   The instructor should set a scenario whereby one member of a buddy pair has become exhausted and cannot fin and has stopped some distance from the other. Start the rescue where a little distance (10m) needs to be covered to reach casualty and where it will involve a tow to point of safety:
    - Acknowledge signal, casualty told ‘rescuer on way’ and to ‘stay calm’. Finning towards casualty done as quickly as possible using overarm ‘crawl’ stroke but keeping casualty in view all the time
    - On reaching casualty, firm contact made, repeat ‘stay calm’, casualty told to relax and lie back on surface
    - When casualty is in position a firm grip made and maintained during tow to nearest point of safety (shore, jetty, pier, poolside or boat)
    - Once the point of safety has been reached, firm grip maintained on casualty, assistance requested and under rescuer guidance, casualty is removed from the water

Advanced Snorkeller Course

This section outlines the Advanced Snorkeller course and provides guidance and definitions specific to the Advanced Snorkeller grade. The open water lessons review essential skills and introduce new ones.

Definition of an Advanced Snorkeller

An Advanced Snorkeller is defined as a snorkeller who is comprehensively trained, experienced and responsible and who can, operating within BSAC Safe Diving practice recommendations:

- Dive with a Dolphin Snorkeller or a Snorkel Diver
- Dive with an Advanced Snorkeller or Snorkel Dive Manager to expand their experience beyond the conditions encountered during their training, under the supervision of a Snorkel Dive Manager
- Assist a Snorkel Dive Manager in branch expeditions to known or unknown sites .

Course outline

The Advanced Snorkeller course consists of the following elements:

- Four theory sessions
- A theory assessment
- Five open water lessons
- One dry practical session
- Two assessment dives
- The Snorkel Lifesaver Award (separate notes available).

All practical training in open water requires the achievement of specific performance standards at appropriate points throughout the lessons.

Instructor requirements

Advanced Snorkeller training is required to be carried out by, or supervised by, an NQI who holds a minimum qualification of Advanced Snorkel Instructor

Student/Instructor ratios

For practical lessons, student/instructor ratios should comply with the following guidelines.

The practical lessons assume an hour lesson time, and in order that all students can receive effective tuition during this time, a maximum ratio of four students per instructor is assumed. However, this ratio may need to be reduced or supported by another instructor appropriate to the water conditions, the time available and age of the students. Where in-water time is less than an hour, a lesson can be split into separate sessions.

Definitions

Certain terms are used throughout this section of the instructor notes, which are defined as follows.

Open water – The build up of experience of diving in a wide range of conditions is a major and important part of Advanced Snorkeller training. Snorkel dive sites should include those encompassing a wide variety of topography and underwater life. Access from shore and boats should be included.

Lesson Sequencing

Theory sessions are structured to provide prerequisite knowledge appropriate to different elements of the sheltered water lessons. To ensure that prerequisite knowledge is covered prior to the corresponding practical elements, theory sessions and sheltered water lessons should be run in an integrated sequence as follows:

Theory Lesson AST1 - Aim of the course and developing your snorkelling skills

Practical Lesson ASP1 - Review of basic skills

Theory Lesson AST2 - Snorkelling sites

Practical Lesson ASP2 - Review of different finning techniques and surface dives

Theory Lesson AST3 - Locating and planning for snorkelling sites

Theory Lesson AST4 - Additional equipment

Practical Lesson ASP3 - Using an SMB

Practical Lesson ASP4 - Compass navigation and mini datum deployment and recovery

Practical Lesson ASP5 - Search and recovery

Dry Practical Lesson ASDP6 - Assistant Snorkel Dive Manager

Theory sessions

The lesson notes present the information in the logical lesson structure of:

Introduction – Development – Summary

The visual aids supplied with this course are PowerPoint presentations, with thumbnail illustrations included in the instructor notes which link the information to the appropriate visual aid. The PowerPoint visual aids reflect the scope and depth of information in these notes and are provided in PowerPoint format to enable instructors, if necessary, to either personalize them to their own presentational style, or use them as a base to produce alternative visual aids such as flipcharts, flashcards etc.

In all the theory sessions, instructors should utilise adequate means of checking that the information they have imparted has been absorbed and understood by their students ("check for transfer" by questions, mini quizzes for children).

Instructors should encourage their students to study their manuals. The information is presented in sections, which match each lesson's content (although in a few cases the sequence in which topics appear in the Course Manual differs slightly from their sequence in this manual and the VAs) and contain a quiz section at the end of the notes, together with corresponding answers to enable students to check their understanding.

Open water lessons

Lessons are structured very much on the progressive instruction principle rather than timed delivery. Instructors should take care to view all aspects from the student's point of view, as the instructor's perceptions may be very different to those of the trainee Advanced Snorkeller.

The first two lessons concentrate on reviewing the students' basic skills, such as finning. This not only builds on confidence achieved in sheltered water training, whether this was in a pool or pool-like sheltered water, but also allows for getting used to wearing thermal protection, such as hoods and gloves, and buoyancy aids, which can initially impact on movement etc. These two lessons build a firm foundation for the skills which the remaining lessons cover. The timings for the first two lessons may vary dependent on the above.

It is important to maintain the 'buddy' concept from the outset. Instructors should continue to underline this role by teaching the benefits of buddy assistance while kitting up/de-kitting; the importance of the buddy check prior to **every** snorkel dive; the importance of monitoring the buddy while in water, particularly when surfacing; and diving using the one up, one down principle. This emphasis should take place right from the earliest open water lesson.

The structure of the lessons is based on the demo/mimic/assess principle. Instructors should not rely on the students remembering the details of every exercise from the briefing. Demonstrating every exercise will ensure that the students understand what is expected of them at each point in the lesson.

A number of repeat exercises are included for consolidation of certain skills. It is important that these are carried out so that the skills become second nature to the students and require less mental effort.

Performance Assessment and Standards

Practical assessments

By the end of the Advanced Snorkeller course, students should be able to perform the key skills reliably and repeatedly. Sufficient repetition is therefore built into the syllabus to enable this to be achieved. This is an important element in developing students' confidence in their own abilities to snorkel dive with another snorkel diver, independent of an instructor.

Some of the skills learnt during the course are prerequisites for further skills to be learned later. For this reason the practical assessments are spread individually throughout sheltered water training, rather than grouped together at the end of the course.

Because these assessments of key skills require that students are not only able to perform the skill satisfactorily, but also demonstrate an appropriate level of confidence in doing so, they are identified in the relevant lesson objectives and notes with the use of the definition **competent and confident.** Where these words appear, students should have progressed sufficiently to be able to achieve the relevant performance standards without supervision, in the water conditions appropriate to that lesson. These performance standards are incorporated at the end of the relevant lesson's notes.

Theory assessment

The theory assessment can be undertaken any time after the completion of the theory sessions but must be completed before granting of the Advanced Snorkeller qualification. The style of the assessment depends on the age of the student: a quiz may be the most appropriate format for younger students, whereas older students may be happier completing a multiple choice paper (available from BSAC HQ). A pass mark of 80 % must be achieved. Students with special needs may take a quiz or an oral multiple choice paper. (Further information can be found on the BSAC website: www.bsac.com – Students with learning difficulties).

Aim of the course and developing your snorkelling skills

Lesson objectives

This lesson briefly outlines the Advanced Snorkelling course, which covers developing and extending practical skills and theory knowledge, understanding the varied conditions likely to be encountered, and using additional equipment. The course will add to the students' awareness of conditions in order to help them plan longer or deeper snorkel dives, and will explain the importance of their role as snorkel dive leaders of both snorkellers with similar experience and those less qualified than themselves.

Achievement targets

At the end of this lesson students should:

- Understand the contents of the Advanced Snorkeller course
- Understand that the Advanced Snorkeller course enhances the skills and experience gained from, or since becoming Snorkel Divers, with extra theory and practical skills which support snorkelling in varied conditions for longer or deeper snorkel dives
- Understand that rescue skills will need to be developed, practised and assessed to achieve the Snorkel Lifesaver award, which is part of the Advanced Snorkeller qualification
- Understand that to be able to continue enjoyable and safe snorkelling at whatever level, all snorkelling requires self risk assessment to understand personal limitations and considerations.

Advanced Snorkeller course - aim

Welcome students to the course and detail any domestic or other arrangements that students need to know for running the course.

Aim of the course

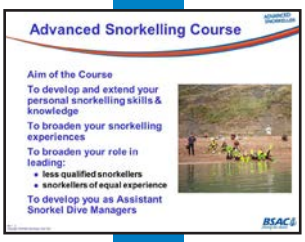
To develop and extend your personal snorkelling skills and knowledge

To broaden your snorkelling experiences

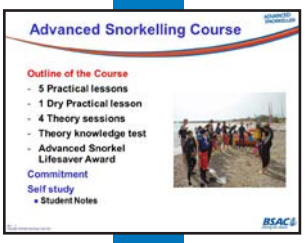
To broaden your role in leading:

- Less qualified snorkellers
- Snorkellers of equal experience

To develop you as an Assistant Snorkel Dive Manager



Advanced Snorkeller course – outline



Explain that the course comprises:

- Five practical lessons
- One dry practical session
- Four theory sessions
- Theory knowledge assessment
- Lifesaver assessment – Snorkel Lifesaver Award.

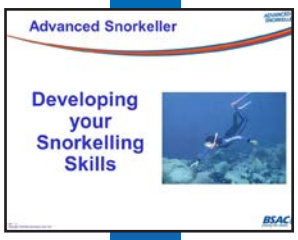
Commitment

Emphasise that commitment to the Advanced Snorkeller training programme is important to enable it to run smoothly for students and the Instructors.

Self Study

Another important element of the course is self-study using the student manual provided.

Developing snorkelling skills



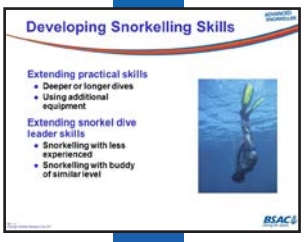
Extending practical skills

There is no substitute for 'going snorkelling' to extend snorkellers' experience of varying underwater conditions and to extend their 'snorkelling fitness' to:

- Dive deeper or longer.

To support particular interests or locate and mark specific snorkel sites may require:

- Using additional equipment.

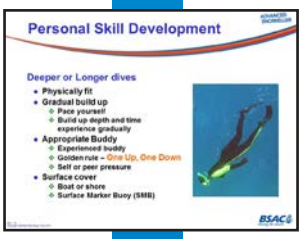


Extending snorkel dive leader skills

A natural development in extending your own skills is that as a snorkeller with more experience you will:

- Lead snorkellers with less experience
- Lead or buddy up with a snorkeller of the same or similar level or experience

Personal skill development



Deeper or longer dives

Advanced Snorkellers are at a level where the choice of extending their skills even further will encompass deeper or longer dives. These need preparation and progressive development to make them enjoyable yet safe experiences.

- **Physical fitness**

  As Advanced Snorkellers will experience different types of conditions and snorkelling sites it is important that they are always 'fit to snorkel'. A general level of all round fitness is needed but 'snorkel fitness' can be built up gradually.

- **Gradual build up**

  - It is really important to pace yourself and not attempt too much too soon
  - Build up depth or time on snorkel dives in small, progressive steps building on existing experience

    If there is a large time gap (for example a couple of months) or, if wearing additional thermal protection for the first time, don't assume your fitness level is the same as when you last snorkelled – you will need to build up in progressive steps again.

- **Appropriate buddy**

  - When building up experience be accompanied by an appropriate buddy, preferably a more experienced snorkeller but, if not available, then another Advanced Snorkeller of equal experience who wishes to develop his or her skills in the same way
  - Always remember the gold rule – 'One Up, One Down'
  - Above all, personal skill development should avoid peer or self-pressure to extend experience of depth, time or conditions too quickly. Remember your own and your buddy's limitations when planning progressive development.

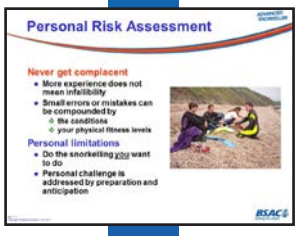
- **Surface cover**

  - Whenever you go snorkelling, from boat or shore, ensure there is surface cover who know your snorkel dive plan.

  To help the surface cover monitor the area you are snorkelling in, carry:

  - An SMB.

Personal risk assessment



With the variety of snorkelling choices available to Advanced Snorkellers, it is even more important that self risk assessment is undertaken when extending experience. Never become complacent about your level of skill.

Never get complacent

Good snorkel divers will always continue to learn from their experiences and from diving with a variety of experienced buddies. The 'been there, done that' attitude may not only be arrogant but can also become a problem when self-risk assessment is ignored. You could be putting not only yourself but your buddy at risk. Remember:

- **More experience and knowledge does not mean infallibility**

  Nobody is so good that nothing can go wrong!

- **Small errors or mistakes can be compounded by**

- the conditions
- your physical fitness level

Personal limitations

- **Do the snorkelling you want to do**

  In broadening experience, there may be certain types of snorkel diving that do not appeal. In a sport to be enjoyed, personal choices are important. Staying on the surface may be better and safer than going underwater and being worried, uncomfortable and a risk to yourself and your buddy.

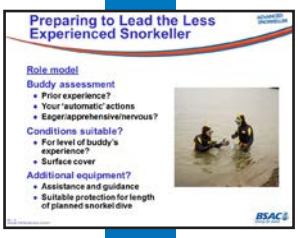
- **Personal challenge**

  The challenge of snorkel diving should be addressed by self-preparation, practise and progressive experience to make the safest choice of type of snorkel diving.

Preparing to lead the less experienced snorkeller

Role model

Snorkel dive leading the less experienced, especially new snorkellers, is a very rewarding experience and puts back into snorkelling what more experienced snorkellers have learned from others. Remember however, that the experienced snorkeller will be seen as a role model to be copied or imitated by the less experience, not just their buddy but also other snorkellers in the vicinity. Their snorkel diving conduct and practice must be of a high standard at all times.



Buddy assessment

- **Prior experience**

  The type of snorkelling and suitability of conditions will depend on the buddy's prior experience. In many cases, the Snorkel Dive Manager will already have given this information to the snorkel dive leader. However, to establish a good buddy rapport, it is important to discuss with them what they want or expect from the snorkel dive, and it is an opportunity to discover any concerns they may have.

- **Your 'automatic' actions**

  Experienced snorkellers can forget that what are automatic reactions to them egs, ear clearing and the easiest method of putting fins on, are actions that are still being learned by new snorkellers. They may have been taught something, but with everything else they are trying to remember, have forgotten it. Remember what it was like when you were at that level of experience – tactfully guide, reassure and don't rush them.

- **Eager/apprehensive/nervous**

  A snorkel dive leader will also need to remember that they may be dealing with an over-eager, apprehensive or nervous new snorkeller and their role is to calm, guide and above all make the snorkelling a safe and enjoyable experience.

Conditions must be suitable

- **For level of buddy's experience**

  Generally, the Snorkel Dive Manager will have planned the snorkelling to suit the levels of snorkel divers in the group, but anticipating conditions and including this in the buddy brief demonstrates good briefing practice and is reassuring to the less experienced.

- **Surface cover**

Again, the Snorkel Dive Manager generally arranges this but explaining this to the less experienced is part of the buddy brief. Surface cover can also assist in kitting up and can provide any other extra help, if required, on entry and exit.

Additional equipment?

Make sure that the buddy understands how to deal with any additional equipment that is to be used on the dive. Even though it may be equipment you will be operating yourself, such an SMB, there could still be implications for your buddy, such as keeping out of the way of the SMB line. Check that your buddy has suitable protection for the planned dive and adjust the dive plan accordingly if not.

- **Assistance and guidance**
- **Suitable protection for length of planned snorkel dive**

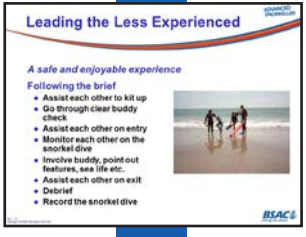
Snorkel dive brief - SEEDS

By the time you come to give the snorkel dive brief you should know the level of your buddy and the snorkel dive plan, which will probably have been decided or briefed by the Snorkel Dive Manager. Carrying out a SEEDS brief is very important in making the less experienced snorkeller feel involved as a buddy and therefore an important part of the dive. Even if the Snorkel Dive Manager has given a general brief, still cover the following:

- **Safety**
  - Review any site considerations
  - Confirm that you and buddy are fit to snorkel
- **Exercise**
  - What you both want to achieve from this snorkel dive
  - Method of entry/exit and where you will snorkelling
- **Equipment**
  - As well as mask, fins and snorkel, is there any additional equipment to consider egs, wetsuits, weightbelts, snorkel vests or skin suit, t-shirt and sun cream
- **Discipline**
  - Remind your buddy that it is important to stay together at all times and if surface dives are planned, then the golden rule is One up, One down
- **Signals**
  - Go through buddy signals as well as any special signals you may use if you spot something of interest, and signals to shore cover.

Leading the less experienced

Having involved the less experienced snorkel diver in the brief keep them involved throughout the whole dive so they have a safe and enjoyable experience.



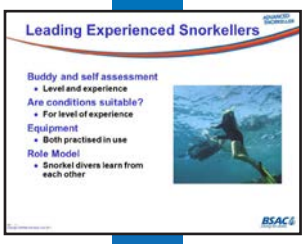
Following the brief

- Assist each other to kit up
- Go through a buddy check and assist each other on entry
- Monitor each other on the dive, not just a one-way check by the snorkel dive leader, as this reinforces the buddy's obligations to the dive leader. The snorkel dive leader's experience should enable them to pick up any signs of

apprehension or nervousness very quickly. Slowing down and allowing the snorkel dive to proceed at the buddy's pace is often the best option.

- Navigation throughout the snorkel dive is the snorkel dive leader's role but remember to involve the buddy. Point out significant navigational features, points of interest and marine life. Remember, what may seem almost insignificant or familiar to an experienced snorkeller will probably 'make' the snorkel dive for the less experienced: their view of the snorkelling world is more restricted and hence even the commonplace appears interesting and exciting.
- Assist each other to exit and dekit
- Debrief the snorkel dive but again, remember that the buddy should be involved rather than just talked at. Discussing the session and comparing notes contribute to the enjoyment of snorkelling and are also part of the ongoing learning process.
- Record the dive:
  - Ensure snorkel dive details are given to the Snorkel Dive Manager straight after exiting the water
  - Remember that for the less experienced, every snorkel dive is important and they will want to record it in their personal logbooks. It is good practice for the dive leader to ask their buddy to sign their logbook too.

Leading experienced snorkellers



Buddy and self-assessment

- **Level and experience**

  Establishing your respective level and experience, together with any likes and dislikes, is crucial when snorkel diving with an unknown buddy. If diving with someone for the first time the leader should ensure the dive and conditions are within their own experience range.

Are the conditions suitable?

- Are the conditions and the type of snorkel dive right for the level of experience of the buddy?

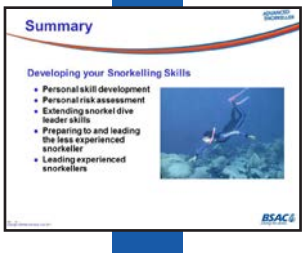
Equipment

- Both divers need to be practiced with any equipment required for the dive and conditions. Who will handle equipment, such as an SMB, should be included in the dive plan – it does not always have to be the dive leader.

Role Model

- As the snorkel dive leader, even with experienced snorkellers you are still a role model at all times. Snorkel divers learn from each other on every dive, so ensure it is good practice and snorkelling dive conduct that will be remembered and copied!

Summary – developing your snorkelling skills



- An outline of the Advanced Snorkeller course
- Personal skill development
- Personal risk assessment
- Leading the less experienced snorkeller
- Leading experienced snorkellers

Snorkelling sites

Lesson objectives

This lesson looks at different types of snorkel sites and considers the approaches needed for different types of snorkel diving, including risk assessment and safeguards. The lesson supports the broader role of the Advanced Snorkeller as an assistant to the Snorkel Dive Manager.

Achievement targets

At the end of this lesson students should:

- Understand that assessment and precautions taken for various types of snorkelling are not only important in dive planning, but will also support considerations when undertaking the role of assistant to the Snorkel Dive Manager
- Understand that to be able to continue enjoyable and safe snorkelling at whatever level, all snorkelling requires self risk assessment to understand personal limitations and considerations.

Snorkelling sites

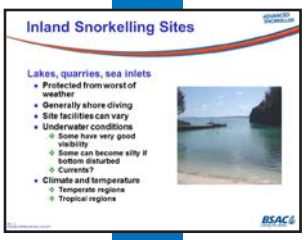
A huge variety of types of snorkel diving is available to snorkellers, generally encompassing:

- **Inland sites**
- **Sea sites**
  - Shallow reef and wrecks
  - Sea walls
- **Night dives**
- **Drift dives**

Any of the above sites may be known and snorkelled regularly, or they may be unknown sites that have never been snorkelled

Instructor note *– VAs 1-11 look at types of snorkelling. As far as possible draw out from the students the specific site considerations for each type of snorkel dive. Cover what needs to be assessed, considered and included in snorkel dive planning as a buddy and, more importantly, as a snorkel dive leader.*

Inland snorkelling sites



When snorkelling is mentioned, the usual response is to think of snorkelling in the sea, but there are a number of inland sites that can offer good snorkelling.

Lakes, quarries and sea inlets

As well as offering a diversity of fresh water underwater life and scenery, inland sites also offer a good environment for training and building experience. The sites can vary from fresh water diving sites, such as quarries and lakes, to inland sea water sites such as inlets or lochs.

- **Protected from worst of weather**

  One of the main benefits of inland sites is that they are generally protected from the worst of the weather so surface conditions are good

- **Generally shore diving**

  Generally, although not always, inland sites are shore dives. Access to the shore from which snorkelling is to take place needs to be checked. If it is private land, permission may be needed to allow snorkelling to take place but most sites used by divers and snorkellers have public access

- **Site facilities can vary**

  Many inland sites are designated and organised as diver and snorkel diver training or diving centres. These normally provide excellent facilities such as car parking near to the water's edge, showers, food and drink, emergency rescue boats and first aid facilities. However, other venues may have no facilities whatsoever and snorkellers have to be totally self-sufficient to dive these sites.

- **Underwater conditions**
  - These can vary dependent on the site. Some sites can offer excellent visibility.
  - Quarries and lakes, because of the lack of water movement, tend to become silty, particularly on the bottom. Snorkel divers need good buoyancy control to prevent stirring up this silty layer. The more divers and snorkellers using a site, the greater the reduction in visibility will

be! These sites can also experience lower visibility following rain, when water carrying sediment drains into the quarry or lake.

- Sea inlet sites may experience currents as the tide rises and falls, filling and emptying the inlet. Currents, the horizontal movement of water, can have an impact on the best time to go snorkelling.

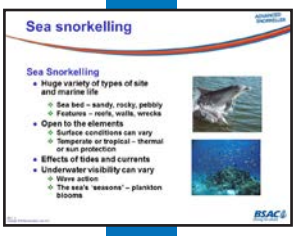
- **Climate and temperature**

Depending on where you are in the world, climate and temperature not only dictate the thermal protection needed for diving but surface protection as well.

- In temperate regions, consideration should be given to thermal surface protection before and after snorkelling particularly if no facilities exist on site. Even in warm summers in temperate regions, fresh water filled lakes or quarries can be very cold.
- In tropical regions, sun protection will be needed and, in warm waters, thin protective clothing to prevent burning when snorkelling on the surface. Also ensure fluids are taken to prevent dehydration.

Sea snorkelling

- **Huge variety of types of site and marine life**



Around the world there is a huge variety of types of snorkelling site and a huge diversity in the marine life to be experienced – it's one of the joys of snorkel diving.

- Sea bed type, from sand, rock, pebbles and even mud, will dictate the type of marine life to see.
- Underwater features can range from rocky reefs, coral reefs and rock pinnacles, to walls and shallow wrecks.

- **Open to the elements**

- Surface conditions can vary greatly, depending on the weather. The sea is exposed not only to local weather conditions but also to waves generated by weather systems many miles away. Even when it is sunny and windless on the snorkel site wave heights can vary depending on the winds way out to sea.
- Whether snorkelling in temperate or tropical regions, you are exposed to the elements so it is important to consider thermal or sun protection.

- **Effects of tides and currents**

As you learned in Snorkel Diver, whilst waves can affect a snorkel site, particularly entry and exits, tides and currents can also have effects. Waves, tides and currents are important when planning any snorkel dives in the sea and we are going to look at this in the next lesson.

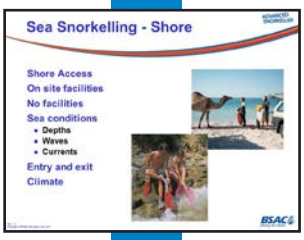
- **Underwater visibility**

Visibility can vary from day to day on the same snorkel site. It is what makes snorkel diving so interesting; you very rarely experience the same conditions on one particular site.

- Recent weather can create rough seas which may have churned up the seabed, reducing visibility. Near the coastline, heavy rain may have drained off the land carrying sediments with it.
- The sea has its 'seasons', as does the land. There are times of the year when microscopic life called plankton 'blooms'. This clouds the water and

although highly attractive as a rich food source for marine life, it does reduce visibility.

Sea snorkelling - shore



- **Shore access**

  Access to the shore is generally good but in some areas diving is restricted or prohibited due to surface traffic. If the coastline is on private land, permission may be needed to allow diving to take place from the shore but most sites used by snorkel divers have public access.

- **On site facilities**

  Coastal dive centres offer most facilities that a snorkel diver needs and can provide details of the local shore dives and advice on the marine life to expect.

- **No facilities**

  This type of shore diving means that snorkel divers must be totally self sufficient.

- **Sea conditions**

  - Shore snorkel diving can offer a range of depths - it is not always shallow as the depth available depends on the local topography.
  - The type of coastline and wave action will determine whether entry and exits are possible.
  - Currents generally run parallel to the shoreline. Shore snorkel diving requiring a return to the entry point should only be undertaken if currents are weak.

- **Entry and exit**

  It is not only waves that affect entry and exits. Remember from the Snorkel Diver course that the rise and fall of the tide may mean an entry is easy at high water but, when the tide falls, the exit becomes difficult or impossible, or vice versa. For example, rocky entries and exits present a challenge at the best of times but if the tide falls during a snorkel dive, you may not be able to get back up the rocks.

- **Climate**

  Depending where in the world you are snorkel diving, remember to give consideration to thermal surface protection before and after snorkelling, particularly if no facilities are on site when diving in temperate regions. Sun protection and protective clothing will be needed to prevent burning when on the surface in tropical regions. Also ensure you drink enough fluids to prevent dehydration.

Sea snorkelling – small boats

There are two types of small boat most commonly used for snorkel diving:

RIBs (Rigid-hulled Inflatable Boats)

These boats are constructed using air filled tubes, like the inflatable boat, but the tubes are built into a rigid hull and deck. RIBs are manufactured in various sizes and can generally carry from six to 12 snorkellers.

Common characteristics are that they are:

- Highly manoeuvrable and can reach coastal sites that can only be approached from the sea
- Almost unsinkable (the RNLI in the UK uses RIBs as inshore lifeboats)
- Open boats so passengers are exposed to the elements. RIBs generally need to return to base after each snorkel dive.
- Limited in storage space so snorkellers may need to carry equipment in small dive bags.

Small hard boats

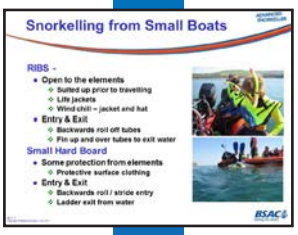
These boats are of solid construction generally in wood or strong fibreglass or plastics and are often used as day charter boats that can carry ten to twelve snorkellers.

- They, like RIBs, are highly manoeuvrable.
- Most have a small cabin area, which can offer some protection from the elements and dry clothes storage. Most have kettles and 'heads', the nautical term for a toilet.

Safety

- Both types of boats act as surface cover for snorkellers able to patrol around the site and move quickly if any assistance is required.
- Listen carefully to safety briefs given by the cox'n/skipper when snorkelling from small boats.

Snorkelling from small boats



RIBs

- **Open to the elements**
  - Snorkellers need to be 'suited up' prior to travelling
  - Life jackets essential for safety
  - For temperate climates a windproof jacket and hat reduce wind chill created by the speed of the RIB and evaporation from wet clothing
  - Food or drink has to be carried by the snorkeller if required
- **Entry and exit**
  - Backwards roll off the tubes when instructed by cox'n, surface and give OK
  - Exit the water by finning hard to lift body out of water and onto tubes

Small hard boats

- **Some protection from elements**
  - Although possible to change on board with limited cabin protection, protective surface clothing should be carried as these boats can stay out at sea all day
- **Entry and exit**
  - Backwards roll off sides or stride entry
  - Ladder exit – some may require fins to be removed and handed into the boat before using, others can be climbed with fins on.

Snorkelling from large boats

These boats are generally more common in tropical climates and are run by dive and snorkelling centres so that bookings (and obviously payment) need to be made. They can take large groups of snorkellers depending on the size of the boat and usually cover one site per trip. They generally will have soft drinks on board. Some dive centres also offer day trips that cover two or more snorkel sites with food and drink included in the price.

- **Protection from sun**

  Generally working in the tropics, these boats have sunshades. However, don't forget personal sun protection egs, waterproof sunscreen cream, skin suit etc, for when you are in the water.

- **Entry and exit**

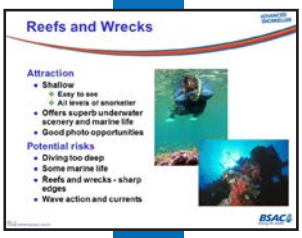
  Entry is generally made with a stride entry from the deck at the side or at the stern (back) of the boat. Exit is by ladder either at the side or the stern. Some ladders require fins to be removed and handed into the boat before using, others can be climbed with fins on.

- **Safety – surface cover**

  The boat acts as surface cover for snorkellers but, with large groups of snorkellers, they tend to remain stationery on the site. Some may also use a small boat to patrol the site and assist in surface cover

  - Listen carefully to the brief that the crew gives – sometimes difficult with a large group on board. If in doubt, ask.
  - Ensure there is a 'check in and out system' being used.

Reefs and wrecks



Attraction

- **Shallow**

  Reefs and wrecks in shallow water offer fantastic snorkelling and with good visibility are:

  - Easy to see
  - Sutable for all levels of snorkeller

- **Offer superb underwater scenery and marine life**

  Rocky or coral reefs and metal reefs (wrecks!) are designated as 'high energy' marine sites for it is in shallow waters that marine life abounds so snorkelling these sites is often quite superb. The structure of the reefs and wrecks not only offers protection for marine life but shows underwater scenery at its best. Depending on where in the world you snorkel, you might see large marine creatures, such a turtles, which are attracted to reefs and wrecks to feed or visit 'cleaning stations'.

- Because of the variety of life and scenery, reefs and wrecks offer good photo opportunities. There are relatively inexpensive waterproof cameras on the market that snorkellers can use.

Potential Risks

- **Risk of diving too deep**

  Reefs or wrecks often drop away to deeper water and in good visibility there can be a temptation to risk snorkel diving too deep. Begin by diving progressively and carefully to pace the dives to fitness level and experience.

- **Some marine life**

  Some marine life is unpleasant if snorkel divers touch or antagonize it. As part of snorkel dive planning, a wise snorkeller utilises local knowledge!

- **Reefs and wrecks – sharp edges**

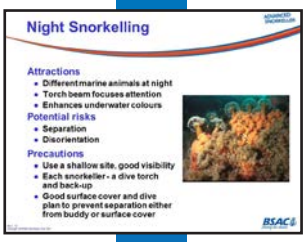
  Avoid getting caught on sharp or abrasive edges by moving carefully and so avoid damaging yourself and the marine life!

- **Wave action and currents**

  As reefs or wrecks can rise up from the seabed to shallow water, the effects of wave action and currents are often noticeable. With currents, it is easier to go 'with the flow'. Floating over a reef or along a reef wall in a gentle current is like being on a moving walkway.

Night snorkelling

It may seem strange to consider snorkelling at night when it is dark both above and below the surface.



Attractions

- **Different marine animals**

  Just as there is a changeover between day and night animals on land when the sun sets, so it happens in the sea with marine life.

- **Torch beam focuses attention**

  Using a torch on a night dive focuses the snorkeller's attention to what they can see within the torch beam.

- **Enhances underwater colours**

  Using a torch enhances underwater colours.

Potential risks

- **Separation**

  Because at night you have a reduced area of illumination there is a risk of separation from your buddy or surface cover.

- **Disorientation**

  With a reduced area of illumination your vision and therefore your reference points are reduced and this can lead to disorientation.

Precautions

- **Shallow site**

  Choose a site which is shallow with good visibility. Snorkelling it during the day helps you recognise underwater features at night.

- **Each snorkeller to carry torch and back-up light**

  Each snorkeller should carry a dive torch – trying to share a torch between a buddy pair can reduce the enjoyment of the dive. Like using two pairs of eyes,

two torches will pick up more points of interest. As well as each carrying a torch, a back up light should also be carried – this can be a small waterproof light. As a buddy pair you will not be able to see each other, only each other's torch beam, so if a torch stops working, the back up light needs to be used to mark the buddy's position. If the backup has to be utilised, abort the snorkel dive.

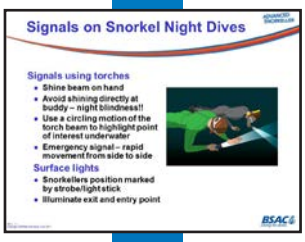
- **Good surface cover and dive plan**

  This is required so that management of the snorkel dive runs smoothly. Although surface cover may see torches being used underwater, to ensure they always know where the snorkellers are, light sticks or strobes can be attached to the snorkellers, or to an SMB if being used.

  The Snorkel Dive Manager and the buddy pairs need to ensure that dive plan and time is carefully monitored.

Signals on snorkel night dives

Signals using torches



Instructor note: *These signals are best demonstrated at night or in a room where blackout can be achieved*

Shine the beam of the torch on the hand to illuminate any signals.

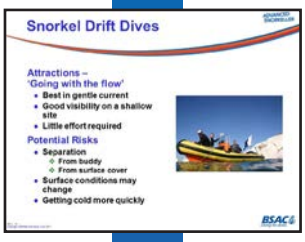
- Be very careful and avoid shining torch directly at your buddy otherwise they would be blinded and lose their 'night vision'.
- If you find something of interest underwater and want to draw your buddy's attention to it, circle the light around the point of interest.
- The emergency signal is given by a rapid movement of the torch beam from side to side.

Surface lights

- As we have already mentioned the snorkeller's position can be marked using a strobe or light stick attached to them or an SMB.
- It is a good idea to mark the exit and entry point if there are no other nearby lights to guide snorkellers back to the shore or boat. However, to avoid night blindness, lights used should not be shone towards the snorkellers but away from them and downwards.

Snorkel drift dives

Attractions - 'going with the flow'



The main attraction of drifting is 'going with the flow', being carried by a current over the seabed, which means that quite a large area can be covered and seen during the snorkel dive.

- **Best in gentle current**

  For snorkel drift diving the current should be gentle, as moving too fast will 'blur' what can be seen below.

- **Good visibility on a shallow site**

  There is no point in attempting to drift over the seabed if you cannot see it! The visibility must be good so that you can see the seabed so this generally means a reasonably shallow site.

- **Little effort required**

  Drifting gently along requires hardly any effort.

Potential risks

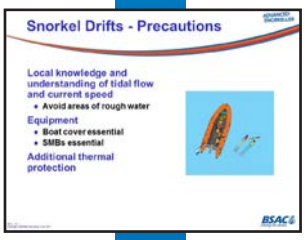
- **Separation**
  - Of snorkellers from each other

    If one stops to look at something or dives down for a closer look, and doesn't warn the buddy or the buddy doesn't notice, the pair will become separated.
  - Of snorkellers from surface cover
- **Surface conditions may change**
  - The speed of the current can be affected by local topography which may also create areas of turbulence and rough surface conditions.
- **Getting cold more quickly**

  As snorkellers are expending less energy by not having to fin, there is a risk they will chill more quickly.

Snorkel drifts - precautions

Local knowledge and understanding of tidal flow and current speed should be obtained.



- **Avoid areas of rough water**

  Currents being affected by local topography generally cause rough water and trying to snorkel through such an area can be uncomfortable.

Equipment

- **Boat cover essential**

  Boat cover is essential when drift snorkelling, to follow the snorkellers, to monitor their progress and to pick them up at the end of the dive.
- **SMBs essential**

  SMBs are essential when drift snorkelling to enable the surface cover to maintain constant watch and therefore know where the snorkellers are at all times.

Additional thermal protection

As drifting does not expend a lot of energy additional thermal protection may need to be considered to prevent the snorkel diver getting cold.

Marine conservation

With the growth of snorkel diving as a sport, marine conservation has become very important so that the underwater environment is preserved for other snorkellers and divers to experience the sights that you have seen. This applies whatever type of snorkelling is being done.

Protection from snorkel diver damage

- **Excellent buoyancy control**

  When snorkel diving, excellent buoyancy control is necessary so that snorkellers do not land on reefs or grab hold of them.
- **Careful finning action**

  Whether snorkelling on the surface or during surface dives, careful finning action is necessary, not only to prevent physical damage to reefs, but also to avoid kicking up the seabed which can cause sediment to drift onto the reef and damage it.

- **Look but don't touch**

  Look but don't touch – a snorkel diver holding on to coral or a rocky reef can damage the marine life.

- **Take nothing except memories or photos**

Wreck protection

BSAC Wreck Policy

Although many wrecks are in the deeper ranges of our seas, there are quite a few that lie in shallower waters and although some may be well broken up by wave action, the Wreck Policy agreed below also applies to snorkellers.

Together with other diving agencies and the Receiver of Wreck from the Maritime Coastal Agency in the UK, BSAC supports its wreck policy with the:

'Protect our Wrecks' initiative

This is to protect wrecks and leave them undisturbed for others to enjoy by adopting a policy of:

- **Look but don't touch**

  A 'look but don't touch' approach means leaving the wreck as you found it.

- **Reporting recovered finds to the Receiver of Wreck**

  However, if any item of wreckage (generally called 'wreck') is found and brought back to the surface, it is law that it must be declared to the Receiver of Wreck. Wreck belongs to someone and the Receiver will try to trace the owner. In many cases, divers and snorkellers are allowed to retain their 'find'. In some cases it might be a historical find – in the past it has been sports divers and snorkellers who have been instrumental in discovering historical wreck sites from small items they have found.

***Instructor note**: although 'look, don't touch' policy has universal application, where this lesson is given outside the UK, the instructor should substitute the appropriate local and international legal requirements.*

Known sites – any type

Known sites may include any of the previous types of snorkel dive.

Attractions

- Snorkellers are familiar with the topography and general conditions of the site and the known points of interest.

Risk Assessment

- Most of the factors that affect snorkel dive planning, such as hazards, tides and current,s will probably be known.

But

- **Change of conditions**

  Any potential change in conditions should always be included in the risk assessment of the site. For example, if it is a popular site, will other snorkellers using it reduce the underwater visibility? Weather changes will certainly affect surface temperatures prior to and after snorkelling and, if the site is susceptible to the elements, what impact will the weather have on surface conditions? Surface conditions, in turn, may create adverse underwater conditions, such as surge from wave action and reduced visibility. Sites may be subject to tidal

influences that affect entries and exits.

So, although a 'known' site, there are always likely to be changes in surface and underwater conditions to be taken into account.

- **Experience level of snorkellers**

  Different known sites may have different depths and conditions so some may only be suitable for a certain level of snorkeller, or alternatively may offer varying depths for a spread of different snorkelling levels and experience. Buddy experience levels appropriate to the known site need to be considered in snorkel dive planning.

Safeguards

- **Never get complacent**

  Familiarity with what to expect on the surface and underwater can often lead to complacency. This may lead to carelessness in snorkel dive planning or snorkel dive briefing, by making assumptions rather than assessing the prevailing conditions.

- **All snorkel diving requires a thorough plan**
- **The right equipment for the planned snorkel dive**

  Select the right equipment by considering the details of the planned dive, the actual conditions, and their possible impact on you and your buddy. For example, taking a less experienced snorkeller on what to you is an easy dive but to them is a more challenging one, take an SMB not only so shore cover can see where you are but also as a surface float should the less experienced buddy get tired.

Unknown sites – any type

Attractions

- **Exploration and discovery**

  There is always the thrill of discovering and exploring a new snorkel site. A new site may become a favourite with a group of snorkellers or a snorkel branch and, after diving it on a number of occasions, it may join the list of 'known sites'.

Risk Assessment

- **Type of site and conditions**

  Diving an unknown site for the first time can be exhilarating – snorkellers don't quite know what to expect but, what is obviously common sense, is not just jumping in and hoping for the best or assuming prior experience is a substitute for planning! Because the site will be unknown, risk assessment that can be done in advance will be limited. Force of circumstances therefore means that the bulk of the assessment will have to be carried out on arrival at the site.

Safeguards

- **As much site information as possible**

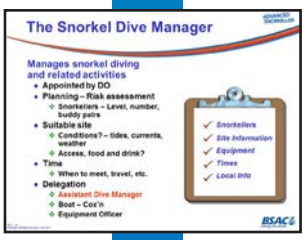
  Even though unknown to the snorkellers, the site may have been dived before and may have been mentioned in snorkelling guides or in a diving magazine. Other snorkelling groups or branches may be familiar with the site and be able to provide information. Find out as much information about the type of site as is possible. If no information is to hand, assessment of the potential

conditions should be made from local information, looking at charts and expected tidal conditions (discussed in our next lesson), and the weather forecast in conjunction with the anticipated effects of weather on the site. Ordnance Survey (OS) maps are also useful in providing information on water access and local amenities, such as car parking.

- The site may, by its type, depth and conditions, dictate the minimum level of snorkeller it is suitable for.

The Snorkel Dive Manager

Whichever type of site is being planned for someone has to take overall responsibility for the snorkel diving session and that person is the Snorkel Dive Manager (SDM). The role is to manage all the snorkel diving taking place, and any related activities such as launching boats if used.



- **The Snorkel Dive Manager is appointed by the Diving Officer**
- **Planning and risk assessment**

  The key to the SDM role is to ensure everything runs smoothly, is successful for all concerned and, above all, is as safe as possible.

  - The SDM needs to know the level of the snorkellers, what snorkel dives are being planned and how many there are so that suitable buddy pairs can be organized.

- **Suitable site**

  This is obviously influenced by the level of snorkeller – for example, trainees need a sheltered protected site with little or no tidal movement and easy entry and exit points.

  - The site conditions therefore need to be assessed even before arriving at the site for state of the tide, currents and how weather can affect the site.
  - Access to the site also needs to be assessed. Is it easy to park cars, change and enter the water or does it mean moving equipment and people from where cars are parked to a suitable site near the water? If it is a session lasting several hours, are there facilities that provide food and drink nearby or will the snorkellers have to take their own food and drink?

- **Time**

  - To arrange when to meet up or arrive at the site, it is important to know when is the best time to snorkel which may be dependent on the state of the tide. The state of the tide is also important if using a boat that will need to be launched and recovered.

- **Delegation**

  The SDM should not be expected to do everything! Although retaining overall control of the session, they should be able to delegate some of the work to others involved on the snorkel dive.

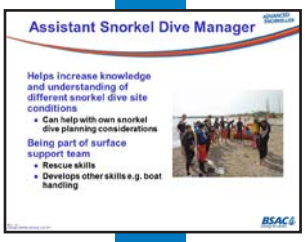
There is one role that Advanced Snorkellers, with their experience, can do:

- **Assistant Dive Manager**

  This role is to support the SDM in everything they do but as directed by the SDM. It may also involve liaising with others holding key roles such as:

  - The Cox'n if a boat is being used for the snorkel dive
  - An Equipment Officer, who may be responsible for providing the snorkellers with the kit being used on that particular session, such as SMBs or compasses.

Assistant Snorkel Dive Manager



Helps increase knowledge and understanding of different snorkel dive site conditions

Working with the SDM is a great way to increase knowledge and understanding of different snorkel dive sites: whether it is the features of a particular site or how different states of the tide can affect the in-water conditions; or how wind and waves can affect some site more than others – eg, underwater visibility may be affected by a particular wind direction blowing across the site.

- **Can help with own snorkel dive planning considerations**

  Working with the SDM also helps with your own snorkel dive planning – you will pick up a lot of extra knowledge from the SDM.

Being part of surface support team

As an Assistant SDM you also have an important role in the surface support team.

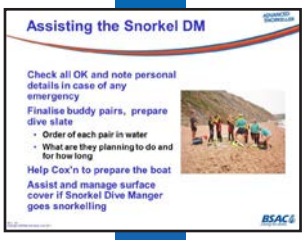
- **Rescue skills**

  You can offer invaluable help to the SDM and other snorkel divers with your level of rescue skills.

- **Develops other skills eg, boat handling**

  You also have the opportunity to develop other skills that will be invaluable to the SDM, such as boat handling.

Assisting the Snorkel DM



The SDM will decide to delegate specific tasks to their assistant but these will most likely include the following.

Check all OK and note personal details in case of any emergency

Check that all who are planning to snorkel are OK and ensure there is a note of personal details and who to contact, just in case any emergency arises.

Finalise buddy pairs, prepare dive slate

Help the SDM to finalise the buddy pairs and prepare the snorkel dive slate to include:

- **Order of each pair in water**

  Order in which each pair are going in for their snorkel dive

- **What are they planning to do and for how long**

Help Cox'n to prepare the boat

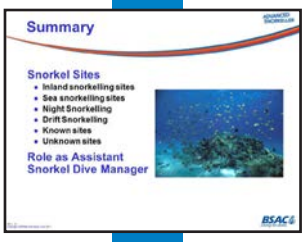
If a boat is being used, does the Cox'n need help to prepare the boat?

Assist and manage surface cover if Snorkel Dive Manger goes snorkelling

By assisting and managing surface cover when the SDM goes snorkelling your assistance becomes, again, invaluable by allowing them have 'time out' to enjoy their snorkelling too!

Snorkel Sites – summary

This lesson has looked at different types of snorkel sites and the considerations for different types of snorkel diving, including risk assessment and safeguards.



Snorkel sites

- **Inland snorkelling sites**
- **Sea snorkelling sites**
- **Night snorkelling**
- **Drift snorkelling**
- **Known sites**
- **Unknown sites**

Role as Assistant Snorkel Dive Manager

Knowing how to assess the risks for various types of snorkelling site, and understanding what safeguards should be applied, are not only important in dive planning as a snorkel dive leader, but are equally applicable to undertaking the role of Assistant Snorkel Dive Manager.

Locating Snorkelling Sites

Lesson objectives

The objective of this lesson is to highlight the importance of planning when organising diving to snorkelling sites. The motivation for diving at a particular site might arise from information given to you by another group of snorkellers or snorkelling branch, or it might come from wanting to broaden experience within a group and find a new site, or the dive may be organised for some other reason. Whatever it is, the dive still needs to be planned.

This lesson focuses on the considerations that need to be made before arriving on the site – the planning that is done by the Snorkel Dive Manager.

The lesson will help in understanding the basic use of charts, the effects of tides and currents, using transits to mark a site and in understanding the importance of weather forecasts. The overall planning involved not only increases the Advanced Snorkeller's knowledge but also will help them when they are assisting a Snorkel Dive Manger.

***Instructor note**: This session is best run using a chart that includes a site which has either been used by the students or which they are planning to use. Involving the students in real planning not only makes them feel their input is valuable but also prepares them to be the Snorkel Dive Managers of the future.*

Instructors presenting this lesson outside the UK should substitute the UK based information with local corresponding information and procedures.

Achievement targets

At the end of this lesson students should:

- Understand how to read a chart in combination with Chart 5011 to identify relevant features on or near the snorkelling site
- Understand how to use tide tables to determine the difference between chart datum and actual depths on the day of the snorkel dive
- Understand the principle of transits for fixing site positions
- Understand the effect of wind on the sea state, and the importance of monitoring weather before snorkel diving

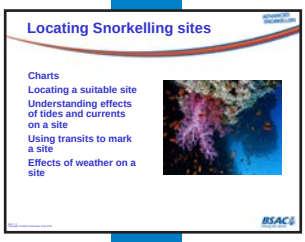
The following items will be needed

A chart, preferably covering a known or proposed snorkelling site

A copy of Chart 5011

Locating snorkelling sites

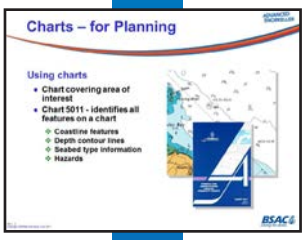
Following on from the last lesson which looked at the different types of snorkel dives, this lesson is going to cover how forward planning is needed before snorkellers even get on site. The Snorkel Dive Manager, often supported by 'assistants' – snorkel instructors and you, the Advanced Snorkellers - carries out this forward planning. This lesson will not only help you in assisting the SDM but also broaden your knowledge even more for your important role as a snorkel dive leader.



To understand more about snorkelling sites, known or unknown, this lesson is going to cover:

- **Charts**
- **Locating a suitable site**
- **Understanding effects of tides and currents on a site**
- **Using transits to mark a site**
- **Effects of weather on a site**

Charts – for planning



Road or Ordnance Survey maps give a coded representation of how the land would look, with its features of towns and roads drawn to a scale. Charts are similar but concentrate on the seabed, coastal topography and particular features, such as potential hazards to navigation. Some of these hazards, such as rocks, may be dangerous for ships or boats but can often provide excellent snorkelling sites.

Car drivers can now use satellite navigation systems to 'read' a route but will probably still carry a road map book in the car for reference. Boat owners too now use satellite navigation systems with electronic charts to 'read' a route but will still carry paper charts in the boat as a back up. Finding a snorkelling site can be done using these electronic charts as they can be downloaded to a computer but you still need to know what the chart represents.

- **Chart covering area of interest**

  To find out about the proposed snorkelling site, we need a chart of that area

  To understand what the chart represents we need

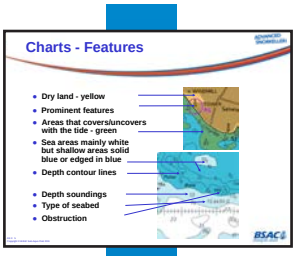
- **Chart 5011 – identifies all features on a chart**

  The definitions of the symbols and abbreviations on any chart are too numerous to add to the chart itself, so another chart, Chart 5011, is needed to identify features. Although referred to as a 'chart', Chart 5011 is in book format.

  From a snorkel diver's perspective, using a chart as a planning tool, the major areas of interest are:

  - Prominent coastline features. These are noted on charts as they can be seen from the sea to help identify position
  - Depth contour lines and charted 'soundings' – depth information
  - Seabed information – helps in anticipating underwater conditions
  - Hazards – some should be given a wide berth but others can sometimes be good snorkelling sites

Charts – features



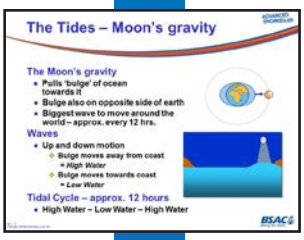
Instructor note: *Using 5011 and a chart, preferably one that includes either a known snorkelling site or a proposed new site, the instructor should involve students in an interactive session to identify examples of the following types of feature :*

- Dry land – yellow. The shaded yellow indicates populated areas
- Prominent land features that can be seen from the sea
- Areas that cover and uncover as the tide ebbs (goes out) and floods (comes in) - green
- Sea areas, mainly white but shallow areas are either solid blue or edged in blue

Instructor note: *Students may ask why all the sea area is not blue – the answer is that as charts mainly cover large sea areas it's cheaper to produce on white paper by not colouring it!)*

- Depth contour lines – the opposite of height contour lines on a land map
- Depth soundings, marked in metres
- Type of seabed – (the one shown on the VA is fine sand, broken shells and gravel)
- An obstruction to shipping – but for snorkellers, possibly a good snorkelling site

The tides – the Moon's gravity



If we are planning to go snorkelling, we need to have some idea of what depths to expect on a site – if the water is too high the seabed or points of interest may be too far down for the level experience of the snorkelling group.

To find out what depths to expect, we need to go back and learn a bit more about tides. In the Snorkel Diver course we learnt about the Moon's gravity and its effect on tides.

The Moon's gravity

- As the Moon circles around the Earth and its gravity, its attractive force, pulls a 'bulge' of water towards it, lifting the sea up.
- At the same time, a bulge forms on the opposite side of the Earth because the Earth is also pulled towards the Moon (and away from the water on the far side).
- The bulge is the biggest wave to move around the Earth, approximately every 12 hours.

Waves

- But also remember what we learned about waves – they don't move water forwards; it is simply lifted up and down. (Remember the pools that have wave machines – you bob up and down. If the waves pushed people forwards or backwards it would be very dangerous!)
    - As the bulge leaves the coast the sea water level lowers – Low Water.
    - As the bulge nears the coast the sea water level rises – High Water

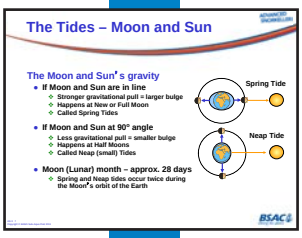
  All over the world, the sea level rises and falls. In some areas the change is hardly noticeable, but in many others the difference between the rise and fall can be clearly seen, with an expanse of shoreline exposed at low water that is then completely covered at high water.

Tidal cycle – approx every 12 hours

- In most places, the tide goes from high water through to low water and back to high water (called the tidal cycle) approximately every 12 hours. In a 24 period there are therefore two tidal cycles – two high waters and two low waters.

The tides – Moon and Sun

We know the Moon's gravitational 'pull' on the Earth's seas, but there is another influence, the Sun. Although its mass is millions of times greater, its enormous distance from the Earth means that the Sun has a smaller effect on tides than the Moon.



- **If the Moon and Sun are in line**
  - Their gravitational pulls combine to lift the bulge of sea water on the Earth
  - This happens at New or Full Moon
  - This combined pull causes quite a big rise and fall of the sea level and these tides are known as 'spring tides'
- **If the Moon and Sun are an angle of 90° to each other**
  - The Sun's small gravitational pull conflicts with that of the Moon and reduces its pull effect on the sea's bulge. The resulting rise and fall of the sea is known as neap (small) tides.

    The face of the Moon seen from the Earth will appear to be half illuminated, but as only one side of the Moon faces the Earth, it is only one quarter of the whole Moon that is actually seen. This is why neap tides are referred to as coinciding with the 'quarters' of the Moon.

Instructor note: *Tell students that on a clear day when you can see both the Sun and the Moon you can tell whether it is spring or neap tides. Stand and place one arm towards the Sun, then place the other arm towards the Moon If your arms are in line so are the Sun and Moon: spring tides. If your arms are at an angle of 90° so are the Sun and Moon: neap tides.*

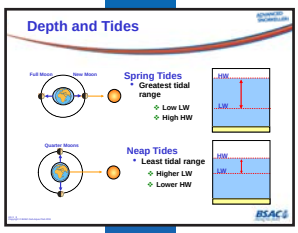
- **Moon (Lunar) month**

  Spring and neap tides occur twice during the Moon's orbit of the Earth, which takes around 28 days (a lunar month).

Depth and Tides

As the tide rises and falls then the depth over a snorkelling site will vary.

The tidal range is the difference between high water and low water.



Spring tides

The biggest bulge occurs at the time of the new or full moon and this gives

- **The greatest tidal range**

  Low Low Water

  High High Water

Neap tides

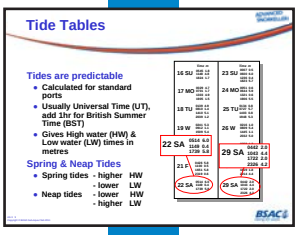
The smallest bulge occurs at the time of the half Moon

- **The least tidal range**

  Higher Low Water

  Lower High Water

Tide tables



We know that we get two spring tides and two neap tides in a lunar month (approximately 28 days) but our months of the year are a couple of days longer in most cases. So how can we find out what time high water and low water is on a snorkelling site?

Fortunately, because tides are predictable, tide tables are available.

Tides are predictable

- They are calculated for standard ports and for snorkel dive planning, tide tables for the standard port specified on the chart which contains the site should be used.
- Usually the times are given in Universal Time (UT). If diving in the UK one hour needs to be added when the clocks have changed during British Summer Time (BST). However, some tide tables produced in the local area of the snorkelling site may give local times, allowing for BST where appropriate.
- Tide tables give the time and height, in metres, of high water (HW) and low water (LW) for every day of the year.

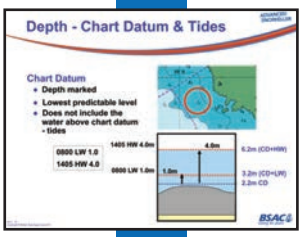
***Instructor Note**: Either using local tide tables or the extract shown on the VA, run through with students what the tables show ie, the time and how on different days the height at HW is more than on others and at LW is less.*

Spring and Neap Tides

- The highest high water and lowest low water heights indicate spring tides
- The lowest high water and highest low water heights indicate neap tides

So looking at the tide tables will show when spring and neap tides occur. Some tide tables include small moon symbols against the date to indicate spring tides.

Depth = chart datum & tides



If we know what times high and low water are we can use that information to go back to the chart and work out what the anticipated depth will be on a snorkel site at that time.

Chart Datum

- The depth marked on a chart is known as the depth at chart datum
- These depths were calculated by hydrographers, sea surveyors, to be the lowest predictable water level that could occur
- However, the depth at chart datum does not include the water that will be above it due to the effects of the tides at any given time

To find out the expected depth for a snorkel dive on a particular day requires the charted depth and tidal variation to be combined.

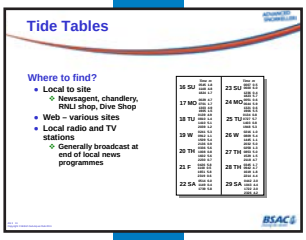
For example:

- The charted depth of the seabed is 2.2 metres
- The tide tables for the day show that at 0800 low water is 1.0 metre. At 1405 high water is 4.0 metres.
- So, at low water there will be 1.0 metres of water over the chart datum depth of 2.2 metres, which means that there will actually be 3.2 metres of water on this site at low water.

- At high water, the tide table shows 4.0 metres, so at high water there will be 4.0 metres of water over the chart datum depth of 2.2.m, which means there will actually be 6.2m of water on this site at high water

This shows the importance of planning. For example, if the snorkel dive was planned just using the depth at chart datum, at 2.2 metres it would seem ideal as a site for a trainee Snorkel Diver's first sea dive to build confidence and depth experience. But if the snorkel dive actually took place around 2 o'clock (1400) in the afternoon, the actual depth of 6.2 metres would be too deep.

Tide tables



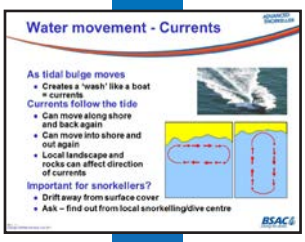
If you are snorkel diving in the UK, where do you find the relevant tide tables for the area you want to snorkel dive?

- Local to the site
  - Generally, tide tables for the local area can be found in newsagents, chandlers, RNLI shops, or in a local dive shop
- Web

  There are quite a few sites that will not only give you tide tables for an area but also include weather forecasts, sea state etc.
- Local radio and TV stations
  - Generally, high water and low water information is broadcast at the end of the local news programme

When snorkelling abroad, local information and tide tables can be found in chandleries and dive centres.

Water movement – tidal currents



You may remember from the Snorkel Diver course that as the tidal bulge moves around the earth:

- It creates a 'wash' like a boat and this wash moves the water – and moving water means currents

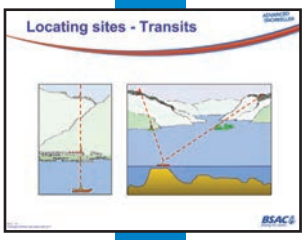
Currents follow the tide and as the tide rises and falls, the currents can flow in one direction and then back in the other

- They can move along the shoreline and back again
- They can move into the shore and then out again
- Local land features, such as rocks, headlands and islands can affect the direction of currents. In some areas the local topography can channel water flowing away from the shore to such an extent that it causes what are called 'rip tides'. Where this occurs on popular beaches, the safety flag system is usually operated, green flag for safe swimming or snorkelling, red flag for danger. If there is no flag system, and the beach is unknown, always check local knowledge.

So currents are important for snorkellers to understand:

- To prevent drifting away from surface cover
- Always ask about local sites – local snorkelling or dive centre

Locating sites - transits



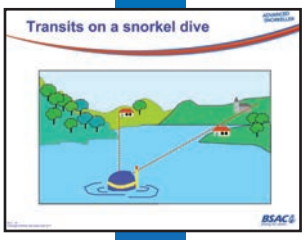
Many snorkelling sites are identifiable because they are on the shoreline close to particular features, or are rocks sticking out from the water. However there are good snorkelling sites that have no visible marker. These can be rocky platforms a bit further out to sea that rise up to shallow water but don't break the surface. How do snorkellers find them?

In many instances a boat is used to get to these sites and the boat can find the site using electronic navigation systems. However many sites are easily found using transits. Transits are visual sightings lining up two features, quite often indicated on charts.

- A transit will put the observer on a 'position line'. Features used may be church spires, towers, prominent rocks on the shoreline, flag or telegraph poles, buildings, etc. The important thing is that the features will not move – caravans, cars or sheep on the hillside are not good features to base transits on! For accuracy, the greater the distance on land between the two features the better, especially if the distance between them is greater than the distance between the nearest object and the eye of the observer.
- More than one transit is needed so that the position lines intersect to pinpoint the snorkel site. Ideally, two transit lines should be at a 90° angle to each other, as larger or smaller angles reduce the accuracy with which the site can be located.

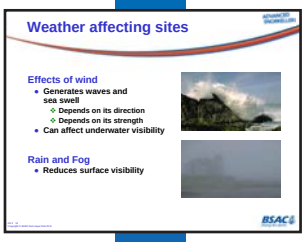
Instructor note: *An interactive session can be run either indoors or outdoors, getting small groups of students to make or take transits for a 'site'. They then need to walk or move away and then come back and use to the transits to re-locate the 'site'.*

Transits on a snorkel dive



You don't have to be in a boat to pick up transits. For example, a pair of snorkellers might be on the surface and see something of interest, then one dives down and finds a piece of wreckage. If they remain over the site and pick up some transits, they can return to the exact spot at a later date.

Weather affecting sites



Planning to visit snorkelling sites also needs to take consider how the weather that could affect the site. One site could be well protected from all winds except those from the south while another might only be diveable if the wind is from the north. For sea and large lake diving, the past, current and future weather situation needs to be considered, and its effects on the dive site.

Effects of wind

- **Wind generates waves and sea swell**
  - The height of the waves and swell depend on the direction from which the wind has been blowing. If the wind has been blowing over open sea towards the land, the wave height could be high, especially as the waves reach shallower depths and begin to break. Quite often, on a sunny calm day, the sea swell will be quite big. This is due to the effects of past wind much further out to sea, but its effects are still felt after the wind has decreased. If the wind is blowing off the land, the sea around the coastline close to shore may be protected, but further out to sea the conditions could be dangerous for a small boat.
  - The height of waves depends on the wind's strength – the stronger the wind, the higher the waves

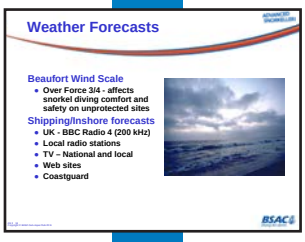
- **The effects of winds and waves can affect underwater visibility**

  Snorkelling sites that are close to the coastline are particularly prone to the effects of wind and waves. The waves, on reaching shallower ground, may cause a groundswell, which stirs up the seabed. Breaking waves will cause more water turbulence and reduction of visibility.

Rain or fog

Both can drastically reduce the surface visibility and compromise safety by increasing the risk of boat or shore cover not being able to monitor snorkellers in the water.

Weather forecasts



Listening to weather forecasts is an important part of planning anything to do with the sea. The forecast will determine whether snorkelling can go ahead or not on a proposed site: if not is there an alternative?

Beaufort Wind Scale

The Beaufort Wind Scale is used in meteorological forecasts to express the strength of the wind. The term 'Force' is used when referring to wind strength and the Beaufort Wind Scale goes from Force 1, calm conditions, up to Force 12, hurricane winds.

- **Wind Force 4**

  A wind of over Force 4 with the consequent sea state can affect snorkel diving comfort and safety on unprotected sites

- **Shipping/inshore forecasts**

  Meteorological offices around the world issue weather forecasts for the 'next 24 hour period', plus special warnings in worsening weather conditions.

  - In the UK, BBC Radio 4 issues shipping and inshore forecasts. The shipping forecast covers large expanses of sea round the UK and, although mainly for offshore vessels, gives an indication of what coastal areas can expect. The inshore forecast concentrates on coastal waters – where most snorkellers will be diving. The forecasts are given every day at the same times, which are listed in radio/TV publications and in nautical almanacs.
  - Local radio stations will also give forecasts, although they may not cover the area of the snorkelling site.
  - Television stations, both national and regional, carry weather forecasts generally at the end of their main news programmes.
  - Web sites are also available where weather forecasts can be accessed.
  - The Coastguard local to the site will give local weather information if contacted. They also provide updates on conditions which they broadcast on VHF radio.

Summary

Planning snorkelling dives is not something that just happens on the site. Pre-planning before leaving for the site is essential, including:

- Using and understanding charts
- Understanding the effects of tides on a site
- Using transits to mark a snorkel site
- Effects of weather on a snorkel site

Additional Equipment

Lesson objectives

The objectives of this lesson are: to acquaint students with equipment they will use when extending their range of snorkelling; and to discuss techniques. Practical in-water teaching of SMBs, the compass, datum lines, searches and torches complements this theory lesson.

***Instructor note**: if space is available, this session can include dry runs to give students a 'hands on' experience with the equipment.*

Achievement targets

At the end of this lesson students should:

- Understand the construction and use of an SMB
- Understand the principles and use of the compass
- Understand how to use SMB components to create datum lines and mini shot lines, and the precautions that need to be taken
- Understand the principles of carrying out snorkelling surface searches
- Understand the importance of line safety
- Understand the benefits of diving torches
- Understand the types of underwater cameras available

The following items will be needed

Buoys, reels, small weights, a compass, examples of diving torches and underwater cameras

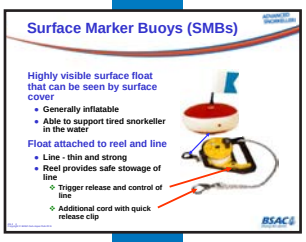
Additional equipment

In this lesson we are going to look at pieces of equipment that can support snorkelling activities and which can also be adapted to help locate underwater features and even lost items.

- **Surface Marker Buoy (SMB)**
- **The compass**
- **Datum lines for marking a site**
- **Searches**
- **Safety when using lines**
- **Torches**
- **Cameras**

Surface Marker Buoys (SMBs)

A highly visible surface float that can be seen by surface cover



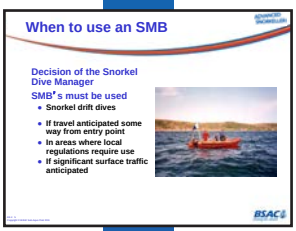
- Generally SMBs are inflatable, which makes for easy storage in kit bags. When inflated they will be of a size that can be easily seen by surface cover. They come in various shapes and sizes from round to cylindrical and are brightly coloured.
- They should support a weight of 10-20kg so that that they do not sink if used as surface support by tired snorkellers.

The float needs to be attached to something that the snorkeller can hold easily. SMBs designed for the sport diving market generally connect to a reel, which does have additional benefits, as we will see later in this lesson.

Float attached to reel and line

- Line on the reel is attached to the SMB by a karabiner. The line should be thin enough for the reel to carry sufficient length and strong enough not to break.
- A reel provides safe stowage for the line attached to the SMB and also enables adjustment of the length of line deployed.
- A trigger-operated locking mechanism enables controlled reeling out of the line, easy adjustment, and controlled reeling in.
- An additional piece of line or cord with a quick release clip can be added to the reel so that it can be attached to the snorkeller to leave hands free – however you cannot surface dive with the reel attached in this way!

When to use an SMB



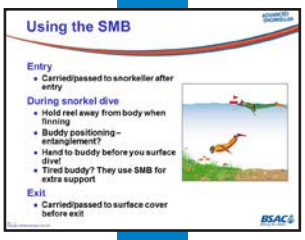
Generally, snorkelling pairs use an SMB at the request of the Snorkel Dive Manager. SDMs are responsible for surface cover, so it is they who evaluate the conditions, the type of snorkel dive, the numbers and levels of snorkellers, in order to determine whether SMBs are needed for the surface cover to see and manage safely throughout the snorkel dive.

SMBs must be used for snorkel drift dives. The boat cover must be able to follow the snorkellers at all times to avoid the risk of separation between the boat and the snorkellers.

- SMBs must be used when snorkellers plan to travel some way from their entry point

- SMBs must be used in areas where local regulations require their use
- SMBs must be used if significant surface traffic is anticipated such as at snorkel sites close to (but not in!) entrances to harbours, shipping channels etc.

Using the SMB



Entry

- Release just a little line to allow some 'play' on the SMB if entering with a stride entry – so that if you go underwater the SMB won't jerk out of your hand before you resurface. On other entries someone can hand the SMB to you once you are in the water, or you can carry it.

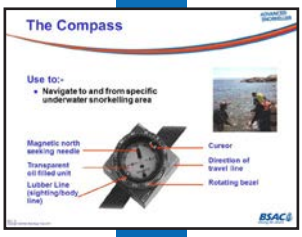
During a snorkel sive

- When finning on the surface, hold the reel out and away from the body to avoid snagging the line on your equipment.
- Get your buddy to fin on opposite side to the arm holding the SMB. However, if you want to maintain close contact you're your buddy, put the SMB between you and get your buddy to hold onto the line.
- Remember to hand the SMB to your buddy before you surface dive.
- If your buddy gets tired (or gets cramp) stop finning and get them to hold or, depending on its shape, lie across the SMB to gain additional support. Then abort the snorkel dive and return to the entry point.

Exit

- The SMB can be carried or passed to the surface cover before exiting the water but ensure the line is wound completely in before doing so to avoid any entanglement with you, your buddy or a ladder if used.

The compass



A compass can be used:

- **To navigate to and from a specific underwater snorkelling area**

  Some snorkelling sites cannot be seen as they are underwater sites that can only be found by sighting them from the surface. Using a compass to navigate from the entry point straight out to the site not only saves time in trying to find it but also allows a longer time to enjoy the site.

- **Compass features include:**
  - A magnetic needle that seeks magnetic north
  - A needle and its compass card housed in an oil filled waterproof case. The oil dampens - slows down - the swinging movement of the needle and card
  - Usually, a direction-of-travel arrow on the casing
  - Most compasses have a rotating bezel around the outside of the casing which is graduated from 0 to 360 degrees. This allows for finning on a predetermined heading.
  - There is often a cursor on the transparent window of the compass so that if the compass needle is kept within the limits of the cursor line, a predetermined direction of travel can be followed.

Using the compass

The following is a simple description of using a compass to travel to and from a site.

Instructor note: *allow students a 'hands on' feel of the compass in a classroom setting following your demonstration, despite the fact that later they will be practising with the compass on dry land and then in water during a practical session.*

Setting the direction

- A compass bearing is taken on the surface towards the site (using information given by other snorkellers or dive centres).
- The compass needs to be aligned to the point of interest along the direction of travel arrow. The bearing is set using the rotating bezel to align the cursor with the point of the north seeking needle.

The journey out

- Whilst finning, the needle needs to be kept within the cursor, and the snorkeller's body is aligned with the direction-of-travel arrow. The distance to the site can be measured either by timing or by counting fin strokes. But remember to look underwater as well as at the compass to find the site.

The reciprocal bearing – the return journey

- In most cases your entry point can be seen but if not the reverse (the reciprocal or 180 degree difference) bearing needs to be followed to return to your entry point. The reciprocal is set by turning and aligning the bezel index marks with the tail of the north-seeking needle.

  If the swim out has been timed or the number of fin strokes counted, using the same method (in the correct direction) should return the snorkellers to their approximate start point.

Compass use - precautions

From the practical session students will learn that some precautions need to be taken when using a compass.

Use

- The compass needs to be held level with the direction of travel aligned with the centre line of the snorkeller's body. Allowing the compass to tip will can prevent the compass card from moving freely.
- Finning across a current will gradually drift the snorkeller off their predetermined course over the seabed, even though the compass bearing is being followed. If snorkellers experience a current, keeping the bearing but finning at an angle across the current should compensate for its drifting effect.

Sources of error

- Magnetic influences will affect the north-seeking magnetic needle. Any lumps of metal will interfere with the compass – just putting a diving knife next to a compass will cause the needle to swing away from magnetic north.

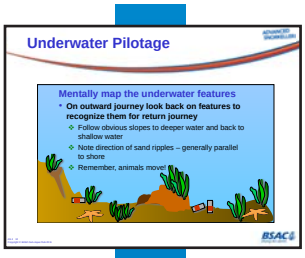
Disbelief

- Another source of error is the snorkeller not believing that the compass is correct! Finning without any other visual reference points on the surface is when a snorkeller needs to trust their compass.

Precautions – fixation

- If using a compass snorkellers should not only check the bearing that they are travelling on, but also look down from the compass to check underwater.

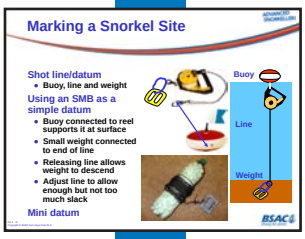
Underwater pilotage



Taking a note of the features you pass when walking or driving can enable you to return to where you started without using a compass or other navigational aid. This is called pilotage and it can be used in exactly the same way when snorkel diving.

- Mentally map the underwater features as you snorkel away from your start point. Turn and look at them when you have gone past because they may look different from the other side, and you will need to recognise them on the return journey. As well as obvious features, such as rocks or a particular type of seaweed, there couple of other things to look out for:
  - Follow obvious slopes to deeper water and return back up the slope to shallow water
  - Note the direction of sand ripples, which generally run parallel to the shore
  - Remember that the marine animals you see do have a habit of moving: although some, like starfish, move quite slowly, but others, such as crabs, can scuttle away quickly.

Marking a snorkel site



There may be times when it benefits snorkellers to mark a particular site. It might be that you know where there is an interesting rock formation which you want other snorkellers to find easily. You can mark it using a shot line – a datum that connects a surface marker with the snorkelling site below.

Shot line/datum

- A shot line consists of a buoy, line and a weight

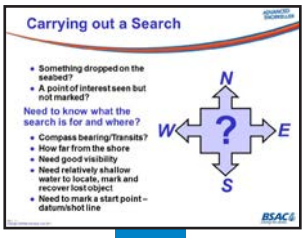
Snorkellers can adapt an SMB to become a simple datum

- The buoy should be connected to the reel. This will support the reel at the surface.
- A small weight should be connected to a clip at the end of the line
- Hold the reel and release the line, allowing the weight to descend to the bottom
- Using the reel, adjust the line so there is some slack in the line (prevents any wave action bouncing the buoy and line and thus moving the weight along the bottom). Do not allow too much slack line as this can cause entanglement when snorkellers surface dive.

Mini datum

- You can also make a datum by using an empty but capped plastic bottle with a length of line securely attached to it and a small weight. The line can be wound around the bottle or the weight. Releasing the weight allows the line to run out as the weight descends to the bottom. If you fill the bottle with foam chips it will float even if the cap leaks.
- However, you need to know the depth to have the correct length of line. If it is too long there is a risk of line entanglement and too short will mean the weight just floats above the sea bed! Using an SMB reel means you can easily adjust the line for the correct depth.

Carrying out a search



Snorkellers quite often get asked if they can search a site because:

- **An object has been dropped on the seabed**

  Typical items you may be looking for include equipment lost by other snorkellers and swimmers, valuables such as watches, wallets, spectacles and jewellery that members of the public have dropped from piers and jetties, and if boats use the area, items that have fallen overboard.

- **A point of interest has been seen but not marked**

  Someone might report seeing a bit of wreckage or a reef on a flat sandy bottom that looks like an interesting snorkelling site but didn't mark it or take transits.

Need to know what the search is for and where it was lost

Searching by jumping in the water and hoping for the best doesn't often succeed especially when the lost objects are small. The searchers need to know what they are looking for, so descriptions of the size, shape and colour of the objects help. The searchers also need to know an approximate area to search. The following may help in defining the search area:

- **Compass bearing/transits?**

  Did anyone take a compass bearing or transits?

- **How far from the shore**

  How far out from the shore? Is this a search best carried out from a boat?

- **Need good visibility**

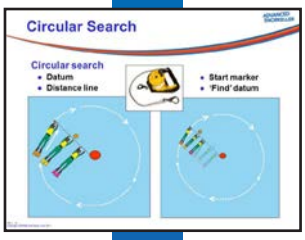
  To carry out a surface search looking down on the seabed, snorkellers need good visibility.

- **Need relatively shallow water to locate, mark and recover lost object**

- **Need to mark a start point – datum/shot line**

Accurate and detailed information found out in advance helps enormously when carrying out a search but unfortunately in many cases information can be vague, which means that the search area may be quite large.

Circular search



Circular search is a simple and effective method of making a systematic search of an area. The basic principle is to make a series of ever widening circular sweeps around a central point. This search system can use two or more snorkellers.

- **Datum**

  The central point of the search circle is marked with a datum. The datum can be constructed and deployed using an SMB, reel, line and weight as described earlier in this lesson.

- **Distance line**

  A circular search is made around a datum using a distance line – a reel and line clipped onto the datum. The end of the distance line is attached to the top of the datum in a secure manner so it does not drop down the line.

  The distance line constrains the snorkellers to move in a circle around the central datum as they fin ahead. After each revolution the distance line is lengthened and the snorkellers swim another circle, searching a fresh area of seabed, further from the central datum.

- **Start marker**

  To save worrying about compass bearings, a second datum (you can use another SMB/reel/weight or a mini datum) can be deployed to mark the start point of each revolution. On reaching the start marker again, you know that you have completed exactly one revolution. Alternatively, you could use a clearly identifiable underwater feature as a start marker.

- **Find datum**

  Snorkellers need relatively shallow water to locate, mark and recover a lost object. Some sites may have good visibility but be too deep to snorkel dive (this may depend on snorkelling fitness levels), or the located object may be snagged or too heavy to lift. In such cases marking the found object using a 'find datum' and getting divers to recover the object may be the only option.

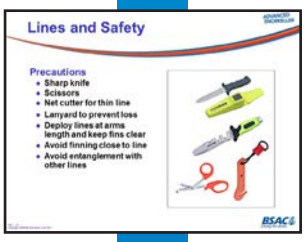
The VA contains two animated diagrams which illustrate the following step-by-step procedure for carrying out a circular search.

Using a datum line as a start point and a compass, a search can be made using headings

1. Deploy the central point datum and attach the distance line to it.
2. Run out the distance line a little way, allowing enough slack for each snorkeller to hold the line ahead of them while looking down to search the seabed. Spacing of the searchers will depend on the bottom type and visibility Lock off the line to prevent it running out during the first circular search.
3. Either mark the start point of the search with a mini datum or use a clearly identifiable underwater feature as a start marker.
4. The leader, the outside snorkeller, holds the reel of the distance line and controls the speed of the search (the outside snorkeller has the furthest to fin!) by giving the 'go' and 'stop' orders. Establish a signal to be given when object is found so that all snorkellers stop at the same time.
5. The leader gives the 'go' and snorkellers move around the datum in a circle using the distance line and looking below to search the bottom. Keep the distance line as taut as possible but not so that it tugs the shot line out of position. Finning at a very slight inward angle to the distance line can help.
6. On reaching the start marker after one circle, the leader calls 'stop' and releases the distance line to allow everybody to move along the line away from the datum. To ensure thorough coverage of the search site, the snorkeller who is closest to the datum should move along the line to where the leader started the previous revolution. If using a 'start' marker datum move it outwards.
7. With positions on the distance line re-established, the start marker placed or a new clearly identifiable underwater feature identified, commence the next circle.

The amount of ground which can be searched depends on the number of snorkellers being used. However the longer the distance line attached to the datum, the more difficult it is to control. If it is necessary to search a large area, the best option is usually to conduct a series of smaller overlapping circlular searches, moving the datum after each circle has been searched, than it is to attempt a single very large search.

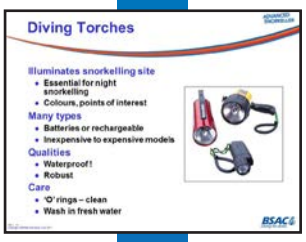
Lines and Safety



Any line on or under the water can be a hazard to a snorkel diver and must be treated with caution. Snorkellers are strongly advised to carry something that can cut line and to observe the other precautions below:

- A small sharp diving knife can be strapped to an arm or leg, or attached to the snorkel jacket
- A pair of surgical scissors is very good for cutting line, and has blunt ends for safety
- Net cutters may be useful but will only cut thin line
- To avoid dropping and losing scissors or net cutters attach them to you using a lanyard
- Deploy any line at arms length and keep fins clear (fin strap buckles have a magnetic attraction for lines!)
- Avoid finning too close to lines, whether on the surface or underwater – fins can get tangled quite easily
- Check carefully before deploying lines to ensure there are no other lines in the water that yours might get tangled with

Diving torches



We touched on the use of diving torches in Lesson 2, when talking about night diving.

Illuminate the underwater site

- They are essential for night snorkelling
- During daylight hours, a torch can bring out underwater colours by compensating for the colours which the water has absorbed from light. A torch can also highlight points of interest and light up nooks and crannies. The light from a torch can bounce off shiny surfaces, which is useful if searching for something small underwater, such as a diver's watch.

Many types

There are many types, shapes and sizes of diving torch, from small pin beam torches that light a small area, to large lamps with wide beams that flood over a larger area.

- Some use replaceable batteries while others use a rechargeable battery pack. Either way, batteries need to be checked before every snorkel dive to ensure that they are working!
- Some can be bought for the price of a couple of downloaded music albums, whilst others cost as much as a decent holiday.

Qualities

- It is obvious that a diving torch should be waterproof. Anything sold as a diving torch in a reputable outlet, will have been pressure tested, often to depths way beyond the operating depths of snorkel diving.
- They need to be robust to cope with the snorkelling environment both in the water and on the surface (in kit bags or on boats!)

Care

- **'O' rings**

  The weakest areas of diving torches are the bulbs and 'O' ring seals. Bulbs need replacing from time to time, though LED torches tend to be more robust.

The torch casing usually needs to be opened to change bulbs and batteries, and to recharge the battery pack. It is sealed by an 'O' ring which needs to be checked thoroughly to ensure it is clean and correctly fitted when putting the torch back together. The smallest particle of dirt, sand, grit or even a hair, can break the 'O' ring seal allowing water to enter and flood the torch.

- **Wash in fresh water**

  As with all other snorkelling equipment, torches should be washed after every snorkel dive

Underwater cameras

If you are interested in photography then it is likely that you will also want to take photographs beneath the surface – the marine world offers fantastic photo opportunities.

If you are interested in taking a camera with you when you go snorkelling there are a few points to be aware of:

Depth rating

This is important, as some 'waterproof' cameras are only proof against rain and splashes etc, not against being submerged in water. However there are a number of inexpensive cameras which are depth rated to 5m, 6m or 10m and are ideal for snorkellers.

Integral cameras

These are usually inexpensive 'single use' cameras that cannot be re-used after taking the photos. The camera is built in to a waterproof casing.

Camera plus housing

Some manufacturers sell waterproof housings for their digital cameras. Housings are available for both compact and SLR styles of camera and specialized underwater flash units are also available. A basic compact in a housing is likely to cost at least as much as all the rest of your snorkelling equipment put together and for top quality pro cameras the sky is the limit!

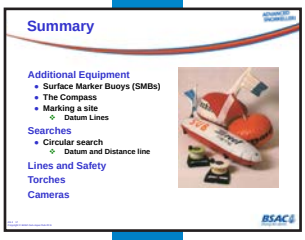
From inexpensive to very expensive

So, underwater cameras can vary enormously in cost – perhaps the important thing is to start with an inexpensive camera and see how you go before spending more money!

BSAC Underwater Photography Courses

BSAC centres and branches run Underwater Photography courses, which the new or even experienced photographer will find interesting and enjoyable.

Summary



Additional equipment

This lesson has looked at additional equipment and techniques that will be used by Advanced Snorkellers when extending their range of snorkelling, including:

- **Surface Marker Buoy (SMB)**
- **The compass**
- **Datum lines for marking a site**
- **Searches**
- **Safety when using lines**
- **Torches**
- **Cameras**

Assistant Snorkel Dive Manager

Lesson objectives

This lesson provides an introduction to snorkel diving activities beyond personal snorkel diving skills, to enable Advanced Snorkellers to contribute to snorkel dive organisation and management under the supervision of a Snorkel Dive Manager.

Achievement targets

At the end of this lesson students should:

- Have experienced the role of Assistant SDM by maintaining a snorkel dive log
- Understand the relevance and importance of the information recorded in the snorkel dive log
- Understand the requirements for safe buddy pairing
- Understand the necessity for adequate snorkel dive monitoring

1. Briefing

This should occur prior to the actual day of the snorkel dive so that students arrive on site with a full understanding of their role. The snorkel dive log sheet should be explained, including why each item of information is collected, how it is used in monitoring normal snorkel dive activities and how it may be used in the event of an incident.

Any issues affecting buddy pairs and timings should be explained, such as:

- Trainees requiring specific instruction with appropriate instructors
- Pairing inexperienced snorkel divers with experienced snorkel divers
- Snorkel divers with particular common interests
- Ensuring instructors and experienced snorkel divers get reasonable opportunities to snorkel dive for their own interests

The reasons for and method of monitoring snorkel diving at the site should also be explained. If relevant at the snorkelling site being used, describe the additional safety cover needed to deal with snorkel divers moving out of sight of the main party. Normally this will involve using a boat or additional shore cover remote from the main party, so include an explanation of how communications will be maintained.

2. On-site

While all decisions remain the responsibility of the SDM, the students should be fully involved in the process so that they gain an understanding of the considerations involved and the practicalities of their implementation. Specific areas of involvement should include:

- Maintaining the snorkel dive log
- Ensuring snorkel divers are ready to go snorkelling at the appropriate times
- Establishing how long each buddy pair is planning to snorkel dive for
- Monitoring and assisting entries and exits
- Monitoring snorkel divers' return times
- Ensuring adequate surface cover at all times
- Recording post-snorkel information, including any specific training activities carried out
- Providing an adequate handover to a temporary substitute (agreed with the SDM) so students get an opportunity to snorkel themselves!

3. Debrief

While opportunities for giving feedback on specific aspects will occur throughout, at the end of snorkel diving activities review the students' overall performances, highlighting areas of good performance and offering constructive criticism where necessary.

Adapting this lesson

The objectives of and activities comprising the above lesson are common to all sites and hence adaptation should only be required in terms of how the activities are implemented specific to a particular site.

Review of basic skills

Lesson objectives

The main objective of this lesson is to review basic skills in an open water environment.

If wetsuits and weights are being used for the first time, carry out a buoyancy check before the lesson.

The review of skills should not be rushed because the pace at which confidence building can occur varies according to individual student's needs and previous in-water experience.

Achievement targets

At the end of this session students should:

- Be aware of buoyancy in relation to protective clothing and weighting, if applicable and be competent and confident at:
- Fitting a mask
- Clearing a mask on surface and de-fogging a mask without removal
- Breathing from a snorkel and clearing it, using both blow and displacement techniques
- Finning forwards, stopping and turning around whilst breathing from a snorkel
- Using signals
- Working as part of a buddy pair.

Lesson contents

Each student's equipment should be prepared and checked by the instructor, at a 'fitting' session before starting the lesson. Ensure that students have suitable thermal protection and buoyancy aids for the local environment. Perform buoyancy checks at this point if wetsuits and weights are being used for the first time (getting weighting sorted out in advance avoids disruption during the lesson when buoyancy check skills are reviewed at step 4 below).

1. Briefing

Explain the lesson objectives to the students, particularly emphasising how less haste at this point will mean more speed overall. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief including signals between snorkellers, signals between surface cover and snorkellers and 'instructional' signals.

2. Entry into water – fitting fins

Depending on the venue and the type of entry, decide whether it is easier to fit fins before or after entry.

- Demonstrate how to fit fins while sitting by the water, on steps or in the water using a buddy or suitable fixed object for support
- Remind students that when wearing fins they should walk sideways or backwards, whether in or out of water
- Demonstrate an entry that is suitable for the site – remember the golden rule, instructor first in

3. Fit, check and clear mask on surface – shallow water

- Review and demonstrate how to demist and rinse out a mask (depending on venue this can be done prior to entry)
- Review and demonstrate how to correctly position a mask on the face. Remind students that once the mask is on they will need to breathe in and out through the mouth. If students are wearing hoods, check that the mask strap has been adjusted.
    - Wet the face with a little water and clear any hair from the face, particularly the forehead
    - Hold the mask in one hand with the strap placed in front
    - Check the mask seal is clear and place the mask on the face
    - Still holding the mask with one hand, draw the strap back over the head
    - Check that no hair (or the edge of the hood) is trapped under the seal, and that the strap positioning is neither too high nor too low on the back of the head, and is just tight enough to hold the mask in position. Involve the students in this check as part of being a buddy.
    - Demonstrate how to check the mask seal for leaks. Using a buddy or fixed object for support take a breath, bend forwards and submerge the mask in water, straighten up, and show that there is no water in the mask
- Demonstrate how to clear water from the mask on the surface, in shallow water using a buddy or fixed object for support:
    - Bend forward until the face is in water, and with one hand gently ease the bottom of the mask seal to allow a little water to enter
    - Bring the head out of the water, hold the frame at the side of the mask with

one hand, tilt the head slightly back and at the same time gently ease the bottom of the mask seal so it just lifts off the face to break the seal, allowing any water to drain away

- Demonstrate how to clear a fogged up mask using a buddy or fixed object for support:
  - Bend forward until the face is in water and, with one hand, gently ease the bottom of the mask seal to allow a little water to enter
  - Bend forwards so the mask lens is horizontal to the water and swish the water around inside the mask to remove the fog
  - With the head up, hold the frame at the side of the mask with one hand, tilt the head slightly back, and at the same time gently ease the bottom of the mask seal so it just lifts off the face to break the seal and allows any water to drain away

4. Buoyancy check

As well as covering the obvious purpose of a buoyancy check, use this review of the buoyancy check to develop students' understanding of how their lung volume affects their buoyancy even if they are snorkelling in warmer climes with no thermal protection.

Move into or enter deeper water. Demonstrate the following actions, then get the students to repeat them:

- Hold the body upright in the water with fins pointing down. If necessary, hold lightly on to a buddy or fixed object for support
- Breathe normally and maintain a position where the whole face is kept above the surface. Students should notice a small rise and fall in their position as they breathe in and out. If necessary, use a very gentle flutter kick to maintain position.
- Repeat the above but this time remove any air from the buoyancy jacket, if worn, breathe out more deeply so that the body sinks just below the surface, then re-surface.

5. Fit snorkel and practice with mask and snorkel, including blow and displacement snorkel clearing

- Review and demonstrate how to secure the snorkel to give comfortable alignment. Slide snorkels which have no mask clip attachment under the mask strap at the side of the face. Position the snorkel so the mouthpiece is easily accessible.
- Remind students that once the snorkel is in the mouth it is difficult to talk. Because open water surface conditions are sometimes choppier than sheltered water, it is advisable to always keep the snorkel in the mouth and only remove it after exit from water.
  - Check that the snorkel position gives comfortable alignment, and then allow students to get used to breathing in and out through the snorkel on the surface before the next step.
  - Review and demonstrate breathing through a snorkel, lying on the surface with the face submerged
  - Get the students to repeat while holding a buddy or suitable fixed object for support. Check each student in turn and give an underwater 'OK' signal, followed by an 'up' signal after four or five breathing cycles.

- Repeat breathing through a snorkel lying forwards on the surface but this time demonstrate how deeper breathing in and out slightly affects buoyancy – students should notice a rise and fall of their static in water position.

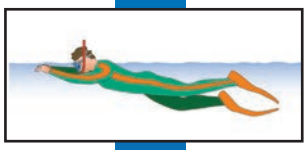
- Demonstrate the blow method of snorkel clearing:.
  - Take a breath and tip the head forwards to submerge the snorkel and thus flood it.
  - Lift the head, tip it back slightly, breathe out forcibly to expel water, then continue breathing through the snorkel.

The above technique may need adapting depending upon the style of snorkel used. Snorkels fitted with drain valves will require less effort to clear. Nevertheless, learning the blow technique will help students should the drain valve not be effective.

- Demonstrate displacement clearing:
  - Drop down below the surface so the snorkel is submerged. Look up at the surface, tilt the head back so the snorkel end is lower than the mouthpiece, and gently blow to clear the water from it before standing up.

When displacement clearing, snorkels fitted with drain valves will clear via the drain valve rather than the tube, but tilting the head back still helps with water displacement, and looking up before surfacing is a safety procedure students will use on surface dives.

6. Finning action - moving

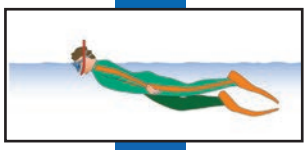


- In shallow water, using mask and snorkel, demonstrate the following:
  - Fin forwards using an 'up and down' smooth leg action, arms forward
  - Stop, and using your hands as paddles, turn around and fin back to the start point.

Remind students that as well as looking down to see what is underwater, they must also look ahead on the surface to see where they are going and avoid other snorkellers and water users.

Maintain control of the group so they do not, at this stage, fin into deeper water – this can be achieved by having them fin in a straight line with clearly defined turn around points or in a circle in front of the instructor.

7. Finning with arms in different positions



- In shallow water, using mask and snorkel, demonstrate:
  - Finning forwards with arms held at the side of the body
  - Finning forwards with hands placed in the small of the back

Remind students that 'streamlining' the body as much as possible makes moving through the water much easier – think fish!

8. Finning at different speeds

- In waist deep water, using mask and snorkel, demonstrate:
  - Finning forwards at a gentle pace – arm position optional
  - Finning forwards at a medium pace – arm position optional
  - Finning forwards at a fast pace – arm position optional

9. Finning session – working as buddy pairs

Pair up students and allow them to snorkel together.

10. Exit water

Remember the golden rule – Instructor last out.

Decide whether it is easier to remove fins before or after exit given the nature of the venue and the type of exit you will employ. Ensure that students hold a buddy or suitable fixed object for support if they are removing fins in the water. Whether removing fins in or out of water, remind students how to walk safely with fins on - either backwards or sideways.

11. Debrief

Use 'REAP' (Review, Encourage, Assess and Progression).

12. Kit care

Whether it is loaned kit or the students' own, remind them to wash kit prior to storage or, depending on venue, do it there and then.

Skills Performance Standards

At the end of this lesson the students should be sufficiently confident and competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Fitting face mask –** fit mask so no hair (or hood if used) is trapped in seal, strap centred at back of head
- **Clearing mask on the surface without removal** – allow a little water into mask, place hand on mask, tip head back, use hand to ease mask seal to allow water to drain away, allow mask to reseal to face
- **Clearing a fogged up mask on the surface without removal** – allow a little water into mask, put face horizontal to water surface and 'swish' water around to clear fog from mask, place hand on mask, tip head back, use hand to ease mask seal to allow water to drain away, allow mask to reseal to face.
- **Breathing from snorkel and clearing techniques using 'blow and 'displacement methods** – lie on surface, breathe normally through snorkel.
- **Clearing a snorkel using 'blow' technique** – allow some water into snorkel, tip head back slightly, breathe out forcibly to expel water and continue breathing through snorkel
- **Clear a snorkel using 'displacement' technique** - drop down below surface so snorkel is submerged, look up at surface, tilt head back so snorkel end is lower than mouthpiece and gently blow to clear water before standing up
- **Finning forwards, stopping and turning around whilst breathing from a snorkel** – with good finning action move forwards whilst breathing from a snorkel, turn using hands and return to start point
- **Use of signals –** student understands and gives clear response to any signals.
- **Work as buddy pair–** student monitors buddy, shows awareness of other water users.

Reviewing different finning techniques and surface dives

Lesson objectives

The main objectives of this lesson are to review different finning techniques and to remind students why circumstances may dictate a particular technique. The lesson covers side and backwards finning, together with front crawl finning (in preparation for rescue work in the Lifesaver Award). The lesson also reviews head first and feet first surface dives and mask clearing. Wearing mask and snorkel is assumed unless otherwise indicated.

The review of skills should not be rushed, because the pace at which confidence building can occur varies according to individual student's needs and previous in-water experience.

Achievement targets

At the end of this lesson students should be confident and competent when:

- Using a different entry to that used in Lesson 1
- Finning forwards, backwards and sideways
- Finning forwards using a crawl stroke with the arms
- Clearing a part filled mask on the surface
- Clearing a part filled mask underwater
- Clearing a snorkel using water displacement technique
- Using a head first surface dive and a feet first surface dive
- Using a different exit to that used in Lesson 1.

Session contents

Each student's equipment should be prepared and checked by the instructor, at a 'fitting' session before starting the lesson. Ensure that students have thermal protection and buoyancy aids suitable for the local environment.

1. Briefing

Explain that this lesson is going to review different finning techniques and why snorkellers should use them. Cover all elements of a SEEDS brief.

2. Entry

At venues where the water is deep or of unknown depth, use an entry where mask, fins and snorkel are fitted prior to water entry, such as a silent entry. From a shelving shore, use a walking backwards entry.

Demonstrate preparing and fitting the mask and snorkel and, using the buddy as support, demonstrate the use the 'figure four' principle to put on fins.

- Silent entry:
  - In sitting position with mask and snorkel in place and fins in or just over the water, demonstrate how to place both hands to one side of the body on the edge of the platform, jetty or boat.
  - Using your arms as support, lift and turn the body away from water, then gently lower the whole body down into water whilst still holding on to the platform jetty or boat. Give an 'OK' signal when the entry is complete.
- Backwards entry from shelving shore:
  - With mask, snorkel and fins in place and using the buddy as support, carefully walk backwards into the water.

3. Revision of finning techniques

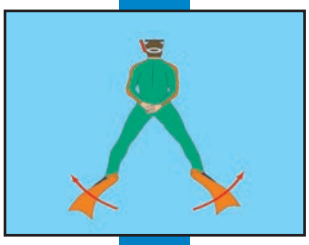
- Backwards flutter kick
  - Demonstrate by lying back on the surface, either removing your snorkel or keeping your head forward so the snorkel does not submerge then begin to fin backwards turning every so often to check for obstructions.
  - When students repeat put them into buddy pairs so they work together.
- Sideways flutter kick:

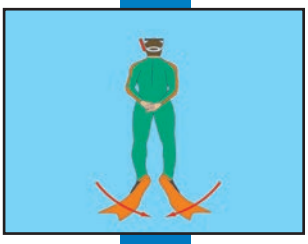
  Remind students that this is a good technique to use when going over corals or shallow underwater features, because the motion causes less water disturbance than the 'up and down' flutter kick, and it also reduces the risk of fins touching or disturbing marine life.

  - Demonstrate by lying back on the surface, either removing your snorkel or keeping your head forward so the snorkel does not submerge, then stretch one arm out in the direction of travel and start to fin, checking for obstructions.
  - When students repeat put them into buddy pairs, and instruct them to face each other for the exercise, and to check their snorkel positioning to avoid submerging it.
- On the spot – slow snorkelling moves:

Remind students that there are times when snorkellers need to remain stationary or move very slowly, such as when hovering over a point of interest or following a marine creature without disturbing it and scaring it away.

- Staying in position using arms or fins to move a little
  - Choose a fixed point or object placed on the bottom and using the arms and hands as 'paddles', demonstrate how to move forwards and backward over it, as well how to turn slowly.
- Moving slowly forwards on the surface using the 'in and out' fin technique, which causes little water disturbance
  - Demonstrate while lying on surface.
  - The first fin stroke: push the legs and fins outwards, away from each other.
  - The second fin stroke: with another push against the water, bring the legs and fins back together again.
  - Repeat the sequence to show how the 'in and out' fin technique will move a snorkeller gently forwards.





- Finning using crawl stroke for arms
  - Demonstrate how the speed of forward finning can be increased by using the arms in an overarm crawl stroke. Remind students that increasing speed also requires a careful lookout to ensure no collisions.

4. Mask clearing

- Demonstrate initial clear:
  - On the surface hold the side of the mask with one hand, tilt the head back and gently breathe out through the nose. Students should feel their mask lift slightly away from face. Explain that if they feel 'mask squeeze' underwater this is all they need to do to resolve it. The next step uses the same principle to clear the mask of any water ingress.
  - Hold a buddy or a suitable fixed object for support and tip the head down so the mask is submerged just below the surface, but the snorkel is not. Lift the side skirt of the mask from the face to allow a small amount of water to enter.
  - Lift the head up on surface, hold the side of the mask with one hand, tilt the head back and breathe out through the nose to dispel water as the mask is eased slightly away from the face in order to break the seal at the bottom of the mask. Replace the seal and stand up.

- Demonstrate progressive flood:
  - Repeat as for the initial clear, but allow enough water to enter to half fill the mask

The above technique may need adapting depending upon the style of mask used, although the progressive sequence will remain the same. Masks fitted with drain valves will require the head to be slightly tilted forward rather than back.

- Snorkel clearing using displacement technique:
  - Demonstrate by dropping down below the surface so the snorkel is submerged. Look up at the surface, tilt the head back so that the snorkel end is lower than the mouthpiece and gently blow to clear water before surfacing.

  When displacement clearing, snorkels fitted with drain valves will clear via the drain valve rather than the tube, but tilting the head back still helps with water displacement, and looking up before surfacing is a safety action.

5. Head first surface dive

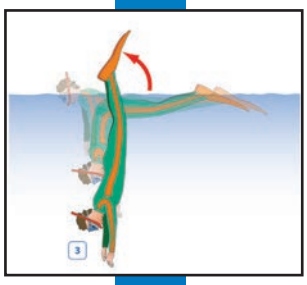
Remind students about:

- ear clearing and mask equalization
- breathing normally not taking more than three breaths before diving, to avoid hyperventilation
- the importance of the 'one up, one down' principle

It is a good idea to place or locate a target on the bottom which students can aim for when learning this dive. Start the dives just out of students' standing depth.

Release any air in snorkeling buoyancy jackets before these dives.

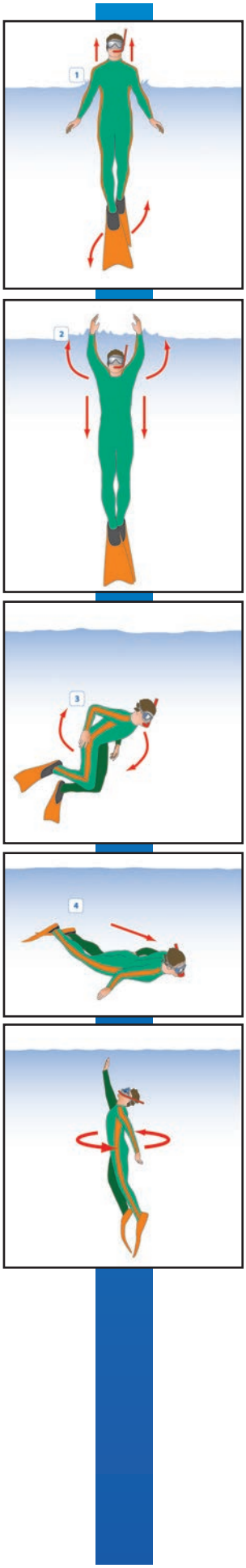
- Demonstrate initial diving preparation position:
  - Lie on the surface face down with body stretched out. Take the arms and hands down so they form a 90° angle to the body and point to the target on the bottom.
  - Bend downwards from the waist towards the arms so the upper body and arms form a 90° angle to the legs.
  - Surface and blow clear the snorkel. Repeat so that students become comfortable with this initial position.



- Demonstrate diving position/handstand/surfacing procedure:
  - Fin forwards gently and, with the target slightly ahead rather then directly underneath, repeat as above except creating a little more momentum by bending at the waist, lifting the legs and fins straight up and out of the water, and dropping down to almost a handstand on the target. (To help with leg and fin position, get students to imagine a whale's flukes, sleek and with no splashing as they sink below the surface).
  - Fin gently forwards out of the handstand, hold one arm above the head ('Superman position'), look up to ensure it is clear to surface (which means that the head is tipped back in to the right position to clear the snorkel using the displacement technique), and turn through 180° on the ascent if there is enough depth. Surface and give an OK signal.

When students repeat the exercise, remember to let them get their breath back before attempting subsequent dives. The dives can be progressed to slightly deeper water

6. Feet first surface dives in deeper water



Although the head first dive is the most commonly used method of diving, point out that the feet first dive can also be used.

- Initial position:
  - Demonstrate how to begin this dive by starting in an upright, vertical floating position.
  - Fin gently to maintain an upright position and extend the arms to either side of body.
  - Start to fin forcefully so the body lifts upwards out of water. Stop finning and allow the body to fall back to the starting position. Repeat a couple of times.
- Dive position:
  - Repeat the above but when the body lifts out of the water, put your arms above your head, stop finning, then bring the legs together with the fins pointing down. and allow the whole body (like a missile) to sink and drop below the surface.
  - Once under water, hold the body position but sweep the arms sideways and upwards, using the hands to force the body further down.
  - Tuck the body and then extend it forwards or further down using your fins.
  - Ascend using the 'Superman' arm position and clear your snorkel using the displacement technique. Spin 180° on ascent if there is sufficient depth. Surface and give an 'OK' signal.

When students repeat the exercise remember to let them get their breath back before attempting subsequent dives.

7. Snorkel swim in buddy pairs

Put the students in buddy pairs and allow a 'free snorkelling' session. Urge students to use signals rather than talking (ie keep snorkels in the mouth) and to constantly monitor their surroundings to prevent collisions with other buddy pairs.

8. Exit water

Depending on the venue, use an exit where mask, fins and snorkel are removed after exit, such as finning out of the water on to the edge of a pool, platform or jetty, or make a backwards exit on to a shelving shore.

- Fin exit
  - Demonstrate a fin exit by starting facing a platform, jetty or boat. Place both hands on the side of the platform, jetty or boat, bounce up and down a couple of times, and on the last bounce use a fin kick to propel your body out of the water, supported forwards on the arms. Roll to one side, to end up in a sitting position.
- Backwards exit
  - Demonstrate a walking backwards exit from a shelving shore, with buddies using each other for support if necessary.
  - Demonstrate the removal of fins, either sitting, or standing with buddy support.

9. Debrief

Use 'REAP' (Review, Encourage, Assess and Progression).

10. Kit care

Whether it is loaned kit or the students' own, remind them to wash kit prior to storage or, depending on venue, do it there and then.

Skills Performance Standards

At the end of this lesson students should be confident and competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Using a different entry to that used in Lesson 1** – student succeeds in mimicking exit demonstrated by instructor.
- **Finning forwards, backwards and sideways and staying over a site** – working as buddy pair, use the three efficient finning strokes to move along three set courses, turning and returning to start point. Snorkel kept clear of water, check made on direction heading
- **Fin forwards using a crawl stroke with the arms** – using efficient forward finning stroke and crawl stroke with arms, move on set course, turn and return to start point. Check made every so often on direction, working as part of buddy pair
- **Clearing a mask on the surface without removal** –allow some water into the mask, tip head back, ease mask seal to allow water to drain out before mask re-seals on face
- **Clear a part filled mask underwater –** just below surface allow a little water into mask, place hand on mask, tip head back, breathe out through nose and, at same time, use hand to ease mask seal, when water dispelled let mask reseal on face
- **Clear a snorkel using 'displacement' technique** - drop down below surface so snorkel is submerged, look up at surface, tilt head back so snorkel end is lower than mouthpiece and gently blow to clear water before standing up
- **Head first surface dive** – in buddy pair, one up one down, bend 90° at waist, legs and fins lifted into handstand position, fin out from handstand position on bottom, surface using Superman position, displacement clear of snorkel, OK at surface
- **Feet first surface dive –** in buddy pair, one up one down, fit upwards and lift arms above head, stop finning and drop down under surface, roll out and fin out on bottom, surface using Superman position, displacement clear of snorkel, OK at surface to buddy
- **Using a different exit to that used in Lesson 1** – student succeeds in mimicking exit demonstrated by instructor.

Using an SMB

Lesson objectives

The main objective of this lesson is to show students how an SMB can be utilised in a number of different ways.

Achievement targets

At the end of this lesson students should:

- Be confident and competent in their ability to use an SMB.

Session contents

Each student's equipment, including SMBs and reels should be prepared and checked by the instructor before starting the lesson. Ensure that students have thermal protection and buoyancy aids suitable for the prevailing conditions.

1. Briefing

Explain that the topic of SMB use runs across two lessons. This lesson introduces and gives practice in using an SMB as a marker buoy to make snorkellers more visible in the water. Practical Lesson 4 introduces and gives practice in using a 'reversed' SMB as a mini datum to mark a site. As surface dives are included in this session, check that the students can clear their ears and remind them about mask squeeze and the 'one up one down' principle.

2. Dry practice of SMB operation

Demonstrate how the SMB, with the reel if fitted, operates and describe how it is used in the following situations:

- During entry – the leader holds it at arms length to avoid entanglement
- During finning on the surface – the leader holds it at arms length to avoid entanglement
- During finning on surface with the buddy also holding the SMB – this can help the leader to control and give confidence to a less experienced snorkeller
- As a flotation device for a tired snorkeller.

Allow the students to practice operating an SMB and reel for themselves.

3. Entry

Demonstrate an entry appropriate to the venue conditions while carrying an SMB. Hold it at arms length to avoid entanglement.

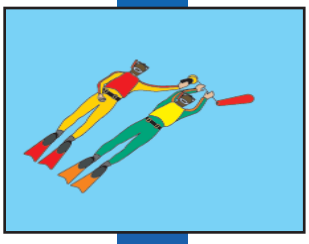
4. Finning on the surface with SMB

- Demonstrate finning forwards on the surface with the leader holding the SMB out to one side to avoid entanglement. The buddy should fin alongside the SMB and avoid entanglement

  Get the students to mimic the demonstration, taking turns to be snorkel leader.
- Demonstrate finning backwards on the surface with the leader holding the SMB out to one side to avoid entanglement. The buddy should fin alongside the SMB and avoid entanglement.

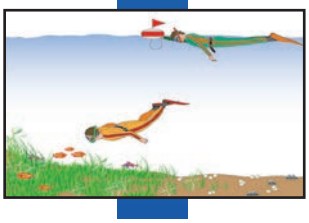
  Get the students to mimic the demonstration, taking turns to be snorkel leader.
- Demonstrate finning sideways on the surface with the leader holding the SMB with the trailing arm. The buddy should fin facing the leader and the SMB, avoiding entanglement.

  Get the students to mimic the demonstration, taking turns to be snorkel leader.
- Demonstrate finning forwards on the surface with leader and buddy holding the SMB between them.
- Get the students to mimic the demonstration, taking turns to be snorkel leader.



5. Surface Dives marked with SMB

Get the students to carry out head first surface dives, working in buddy pairs. The leader passes the SMB to the buddy and then dives and surfaces near to the buddy but avoiding entanglement. The buddy then passes the SMB back to the leader and repeats the exercise.



Demonstrate how an SMB can support a 'tired' snorkeller in the water. Get each student to repeat the exercise.

6. **Snorkel swim in buddy pairs**

   Put the students in buddy pairs and allow a 'free snorkelling' session where they take it in turns to lead and use the SMB. Urge students to keep their snorkels in their mouths and use signals rather than talking. Remind them to constantly monitor their surroundings to prevent collisions with other buddy pairs.

7. **Exit water**

   Use an exit method appropriate to the local conditions, ensuring that the SMB is held at arms length to avoid entanglement.

8. **Debrief**

   Use 'REAP' (Review, Encourage, Assess and Progression).

9. **Kit care**

   Whether it is loaned kit or the students' own, remind them to wash it prior to storage or, depending on the venue, do it there and then.

Skills Performance Standards

At the end of this lesson the student should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Be confident and competent in their ability to use an SMB as snorkel dive leader** - fin forwards, hold SMB to side to avoid entanglement. Fin backwards, hold SMB out to side to avoid entanglement; fin sideways, hold SMB in trailing arm to avoid entanglement; fin forwards, SMB between buddy pair with buddy also holding SMB.
- **Surface dives marked with SMB** - in buddy pair, dive leader in control and giving appropriate signals, pass SMB to buddy before surface dive, take back after surfacing, monitor buddy's surface dive.

Compass navigation, mini datum deployment and recovery, snorkel swim using pilotage

Lesson objectives

The main objectives of this lesson are to teach students how to navigate using a compass and pilotage, and how to deploy a datum line.

Achievement targets

At the end of this lesson students should be competent and confident:

- Using a compass – taking a bearing, following a bearing whilst finning on the surface and returning on a reciprocal bearing
- Deploying and recovering a datum line (shot line)
- Using pilotage to navigate an outward and return journey from a designated start point.

Session contents

Equipment including compasses, SMBs, reels, small weights and knives or scissors should be prepared and checked by the instructor prior to the commencement of the session. Ensure that students use suitable protection for the prevailing conditions.

1. Briefing

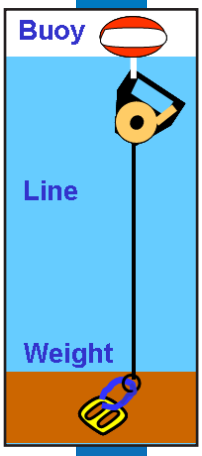
Explain that this lesson teaches the use of a compass to swim on a bearing and return on its reciprocal. This lesson will also teach how to deploy and recover a datum line from the surface in order to mark a site. As surface dives might be required in this session, check that the students can clear their ears and remind them about mask squeeze and the 'one up one down' principle.

2. Dry practice of datum operation and compass use

Demonstrate the operation of the reversed SMB as a datum (shot line) by attaching the buoy to the reel and fastening a small weight to the end of the line. Allow students to practice its operation. Explain its use in the following situations:

- Datum
  - o During entry – hold the SMB and its attachments at arms length to avoid entanglement.
  - o During finning on surface – hold the SMB and its attachments at arms length to avoid entanglement.
  - o Deployment of datum line – after ensuring that the legs and fins are clear of the area of deployment, release the line and allow the weight to drop. When it reaches the bottom, let out a little more line to allow for any water movement, and lock off the reel.
  - o To recover the weight and line, one snorkeller unlocks the reel and begins to wind the line and weight in. The other snorkeller can help by lifting line to make reeling in easier. When all the line has been recovered ensure that reel is locked off.

  Allow the students to practice operating the SMB and reel in each of the above situations (simulated on dry land).



- Compass

  This exercise teaches the basics of handling a compass and develops confidence that, provided the student follows what the compass is telling them, they will go in the right direction. It also introduces the concept that navigation may require control of distance as well as direction.

  At each step in the exercise, instructors should check that the students have set the correct bearings before moving and that, once on the move, they accurately follow the direction of the lubber line. It is far easier to correct any tendency to mishandle the compass at this stage, rather than underwater.

  - o Setting a bearing – hold the compass so that a sighting of the destination object can be taken along (or parallel to) the lubber line. Rotate the bezel to align the index markers with the head of the north-seeking needle.
  - o Follow the bearing – hold the compass so that the lubber line is directly in front of the body and pointing straight ahead. Turn the body to align the bezel index markers with the head of the north-seeking needle, then maintain the body/lubber line orientation while walking forwards (Holding the compass in both hands but with the elbows held tight to either side of the body helps to keep the compass central to the body/lubber line), keeping the bezel index markers and north-seeking needle aligned.

- Estimate and control distance – measure the distance between the start and the destination object by counting paces or seconds. Use a distance of about 20m for this exercise.
- Set and follow a reciprocal bearing – on arrival at the destination object, rotate the bezel index marks to align with the tail of the north-seeking needle while maintaining body/lubber line orientation. Turn the body until the bezel index marks again align with the head of the north-seeking needle. Follow the compass on the return (reciprocal) leg as on the outbound. Distance should be monitored on the return leg by walking for as many paces or seconds as were counted on the outbound leg.

Students should repeat the instructor's demonstration as a buddy pair, one taking control of the compass, the other counting paces or seconds. They should then reverse roles.

3. Kit up and buddy check

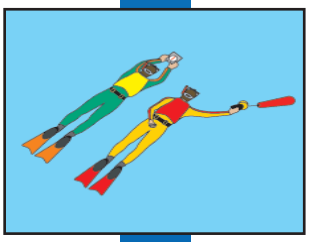
Check that the compass is accessible such that it can be held in the students' field of view, not just while standing but also while in a swimming attitude.

4. Entry

Demonstrate an entry appropriate to the venue conditions, carrying the mini datum and ensuring no entanglement.

5. Compass use

This is an in-water repeat of the dry exercise, enabling students to adapt to a horizontal rather than vertical attitude and to the implications of finning rather than walking while maintaining the body/lubber line orientation. Because of the increased task loading, one student should not be expected to manage both direction and distance at the same time. As in the dry run, divide the tasks between students, or student and instructor, with one navigating out and back while the other monitors distance.



Where there is no natural feature to mark a turnaround point, demonstrate the deployment of the datum line at the end of the first leg (see below). However, do not increase students' task load by asking them to mimic as this deployment is covered later in the lesson.

- Setting and following a bearing and reciprocal bearing whilst estimating and controlling distance:
  - Set a bearing and, following a check by the instructor, follow the bearing to a destination object about 20m away as in the dry exercise. For reassurance, students can look up to check direction, although this should not be allowed to become a substitute for using the compass.
  - The snorkeller monitoring distance counts fin strokes or seconds while visually monitoring progress towards the destination object.
  - As in the dry exercise, the reciprocal is set by aligning the bezel index marks with the tail of the north-seeking needle. The snorkeller turns to establish the return direction and, following a check of direction by the instructor, fins back to the start point. The snorkeller monitoring distance does so by counting the number of fin strokes or seconds recorded during the outbound leg.

Students repeat as a buddy pair – one taking control of the compass, the other counting paces or seconds, and then they reverse roles. Set another bearing and reciprocal course for students to repeat as above.

6. SMB/datum deployment and recovery

The students may have seen you deploy a datum where it marked the turn around point for the compass exercise. However, the other use for a datum is to mark an underwater site or, as will be covered in the next lesson, a datum for the start of a search. Demonstrate as follows:

- Datum deployment
  - Stop above the site and ensure the legs and fins are clear and will not get entangled when the line and weight are released. Release the reel to allow the weight and line to descend to the bottom. Reel in any slack, allowing a small amount of excess line so that the weight and line are not lifted off the bottom by any wave action. Lock the reel and show that buoy not only supports the reel, line and weight but also marks a site.
- Datum recovery
  - To recover line and weight, unlock the reel and wind in. The buddy can help by lifting the line and weight to assist with reeling in. When recovered, lock off the reel.

Students repeat and take turns to deploy and recover the datum. Remind students that when finning on the surface holding the SMB/datum they need to hold it at arms length to avoid entanglement.

7. Using pilotage to navigate out and back from a point

Demonstrate in shallow water so that underwater features and objects can be seen. Show how to navigate using features and objects adjacent to your route away from a start point, then turn around and return back to the start point. Point out to students that on the outward journey it is advisable to stop and look back at each selected feature or object so that it can be recognised on the return journey.

Get students to work in buddy pairs with each taking a turn at leading a short surface swim using pilotage.

8. Exit water

Make an exit appropriate to local conditions, ensuring the SMB/mini datum is held at arms length to avoid entanglement.

9. Debrief

Use 'REAP'.

10. Kit care

Whether it is loaned kit or the students' own, remind them to wash it prior to storage or, depending on the venue, do it there and then.

Skills Performance Standards

At the end of this lesson the students should be sufficiently competent to achieve the following skill performance standards without supervision in the water conditions experienced:

- **Using a compass** –

  Working as buddy pair with clear signals throughout exercise, leader takes a compass bearing on a fixed object – hold compass level, take bearing, rotate bezel to align index markers with north seeking needle. Follow bearing whilst finning, buddy timing or counting fin strokes, compass held so lubber line directly in front of body and compass is level, turn and set reciprocal and return to start point, buddy timing or counting fin strokes. Following role as leader, take role as buddy and time or count fin strokes.

- **Deploy and recover a datum line –** As dive leader, fin to site ensuring datum held away from self and buddy to prevent entanglement, stop above site, ensure legs and fins clear, release reel to allow weight and line to descend to bottom. Reel in line to appropriate length so weight not lifted off the bottom, lock reel. Recover datum - release reel, wind in, direct buddy to help if required and lock off reel when weight recovered.
- **Using pilotage to navigate from and back to a start point –** As dive leader in buddy pair, fin on surface away from start point; pick out/identify key features to use on return journey to regain start point.

Search and recovery

Lesson objectives

The main objectives of this lesson are to teach students how to mark a site using transits and a datum, and how to carry out a search for 'lost' items and recover them.

Achievement targets

At the end of this lesson students should be competent and confident:

- Carrying out a circular search
- Taking transits to mark a site

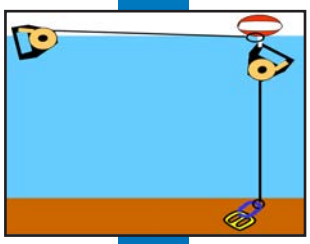
Session contents

Each student's equipment and the equipment for the class as a whole, including SMB/datum (buoy, reel and small weight), a distance line, a 'start marker' (if required), and knives/scissors, should be prepared and checked by the instructor at a 'fitting' session before starting the lesson. Ensure that students have suitable protection for the local environment.

1. Briefing

Explain that this lesson teaches how to search for and recover a 'lost' item. The depth of the search will obviously depend on visibility, as there is a need to be able to see the search area (the bottom) when carrying out any search. The lesson will include deploying a datum line from the surface to mark a site, using a distance line connected to the datum to carry out a surface circular search, recovering a 'lost' object, and recovering the datum. As surface dives are included in this lesson, check that students can clear their ears and remind them about mask squeeze and the 'one up one down' principle.

This lesson will also teach how to pick up transits to enable a site of snorkelling interest to be located again in the future.



2. Dry practice of circular search

This is, in effect, an extension of the dive briefing. Review the operation of the SMB/datum by attaching the buoy to the reel and a small weight to the line and then allow students to practise operating the equipment.

- Datum deployment
  - During entry – hold the SMB datum(s) and distance line at arms length to avoid entanglement.
  - While finning on the surface – hold the SMB datum(s) and distance line at arms length to avoid entanglement.
  - Deployment of datum line – ensure that all legs and fins are clear of the area of deployment, then release the line and weight. When they reach bottom let out a little extra line to allow for any water movement, and then lock off the reel.
- Circular search

  This exercise teaches how to carry out a circular search for a lost object.

  At each stage in the exercise instructors should check that the students are using the distance line as a team, maintaining a good hold and keeping the line as taut as possible to maintain the 'circle' without pulling on the datum marker. Any tendency to mishandle the line will be far easier to correct at this stage than when in water.

  - Having deployed the datum, attach the end of the distance line to the top of the datum in a secure manner so it does not drop down the line.
  - Run the distance line out a little way with enough line to allow the snorkellers to hold it in front of them while looking down to search the seabed. The spacing between searchers will depend on the bottom type and the visibility.
  - Either mark the start point of the search with another datum or use a clearly identifiable underwater feature.
  - The leader holds the reel of the distance line, controls the speed of the search (the outside snorkeller has the furthest to fin!), and gives the 'go' and 'stop' orders. Establish a signal to use when the object is found, so that all

snorkellers stop at the same time

- When the leader gives the 'go', the snorkellers should move around the datum in a circle, using the distance line and looking below to search the bottom.
- On reaching the start marker after the completion of one circle, the leader calls 'stop' and releases the distance line to allow all to move further out along the line away from the datum. To ensure good coverage of the search site, the snorkeller closest to the datum should move along the line to where the leader started the previous search circle. Remember to move the 'start' marker datum as well, if used.
- With positions on the distance line re-established and the start marker placed or a new clearly identifiable underwater feature identified, repeat the circular search.

  The extent of the search depends on the number of snorkellers being used, but the more line that is let out from the datum, the more difficult the search is to control. To cover a large area conducting a series of smaller overlapping searches, moving the datum line between each one, is usually the best option.

Place an object on the second or third circle for students to locate and recover. The distance line should be rewound just short of the object's location so the snorkeller with the reel acts as a marker point and can also point down to the object for the recovery snorkel diver. Designate who is going to recover the object (if only two snorkellers are doing the search, designate the one not holding the reel). Remind the recovery snorkel diver to make sure they avoid all lines underwater and on the surface during the ascent and surfacing procedure. The snorkeller then dives to recover the object.

- Recovery of equipment
  - To recover equipment, the distance line is reeled in and released from the datum.
  - To recover the datum weight and line, one snorkeller unlocks the reel and begins to wind the line and weight in. Another snorkeller can help by lifting the line to make reeling in easier. When the line and weight have been recovered ensure that the reel is locked off.

Get the students to repeat, allowing each to take the role of leader, including giving a brief to their buddy.

3. Dry practice - picking up transits

- Demonstrate how to pick up transits to mark a site.
  - Look for two or three transits that could be used to relocate an identifiable feature on the site (choose a feature that is small, such as a distinctive pebble, so that it can only be identified when very close to it).
  - Once the transits are agreed walk away a little distance from the selected feature.
  - Pick up one of the agreed transit lines and walk along it and at the same time watching carefully to pick up the other transit line/lines to relocate the feature that was selected.

4. Kit up and buddy check

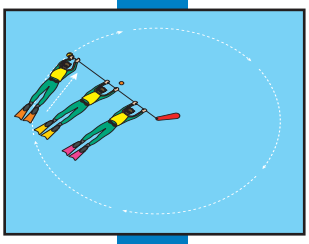
Check that everyone who was allocated responsibility for a piece of kit has it with them and that they hold it in such a way that it will not entangle on entry.

5. Entry

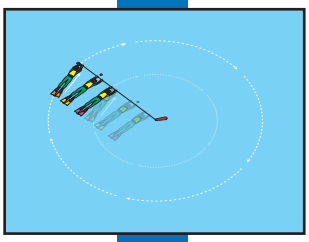
Demonstrate an entry appropriate to the venue conditions, carrying equipment and ensuring no entanglement.

6. Circular search

This is an in-water repeat of the dry exercise to adapt to the horizontal rather than vertical attitude and to finning rather than walking while trying to keep the distance line taught. As in the dry run, divide the tasks between students, or student and instructor, with one leading the search.



- Deploy the datum, attaching the end of the distance line to the top of the datum.
- Run out enough distance line to allow snorkellers to hold it whilst finning forwards on surface and looking down to search the seabed.
- Mark the start point of the search with another datum or use a clearly identifiable underwater feature.
- The leader controls the speed of the search and gives the 'go' and 'stop' orders. Establish a signal to be given when the object is found so all the snorkellers stop at the same time.
- The snorkellers move around the datum in a circle using the distance line and looking below to search the bottom.
- On reaching the start marker after the completion of one circle, the leader calls 'stop' and releases the distance line to allow all to move further out along the line away from the datum. To ensure good coverage of the search site, the snorkeller closest to the datum should move along the line to where the leader started the previous search circle. Remember to move the 'start' marker datum as well, if used.



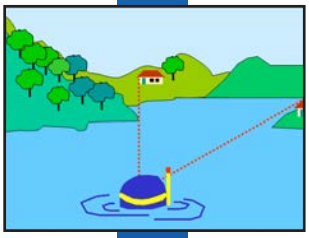
- With positions on the distance line re-established, and the start marker placed or a new clearly identifiable underwater feature identified, repeat the circular search.

  Place an object on the second or third circle for students to locate and recover. The distance line should be rewound just short of the object's location so the snorkeller with the reel acts as a marker point and can also point down to the object for the recovery snorkel diver. Designate who is going to recover the object (if only two snorkellers are doing the search, designate the one not holding the reel). The recovery snorkel diver dives to recover the object, and during the ascent and surfacing procedure, makes sure they avoid all lines on the surface.

Students repeat taking it in turns to lead the search.

- Reel in distance line to datum.

7. Taking transits



- Before recovery of the datum, establish whether there are two or three transits that could be used to relocate the site. Once transits have been agreed, look around underwater to see if there is an identifiable feature near the bottom of the datum. Then recover the datum and fin away a little from the site.
- Pick up one of the agreed transit lines and fin along it at the same time watching carefully to pick up the other transit line/lines to relocate the site.
- Check to see if your transits have brought you back to the vicinity of the selected underwater feature.

- Get each student to take a turn at finding transits, moving away from the position and relocating using the transits.

8. Exit water

Use an exit method appropriate to local conditions, ensuring the datum(s) and distance line are held at arms length to avoid entanglement.

9. Debrief

Use 'REAP'.

10. Kit care

Whether it is loaned kit or the students' own kit, wash kit prior to storage or, depending on the venue, remind them to do it later.

Skills Performance Standards

At the end of this lesson the students should be sufficiently confident and competent to achieve the following skill performance standards without supervision in the water conditions experienced:.

- **Circular Search –** Snorkel dive leader briefs for the search, including who carries which piece of equipment (leader to control distance line on search) and signals, fin out to site, deploy datum, attach end of distance line to top of datum line (secure so it does not drop down), run out distance line with enough line to allow snorkeller/s in group room to hold. Mark or note start point of first circle, hold reel and give 'go' to start, control speed of finning, move around datum searching bottom. Reaching start point after first circle, leader calls 'stop', releases line to allow all to move further out along line away from datum ('start' datum, if used, needs to be moved out also). Repeat as above for second circle. Find object, leader calls 'stop' – object recovered by one snorkeller, wind in distance line and unclip from datum, recover datum(s), exit and debrief.
- **Taking transits -** select two or three transits to relocate a site, choose underwater feature, fin away from site, select one agreed transit line, fin along, watch and pick up other transit/transits, relocate site.

Buoyancy check

Snorkellers moving between one type of aquatic environment and another, such as from a pool to open water, or from warm water to cold water or vice versa, will normally need to make adjustments to their protective clothing and equipment. This is likely to affect the amount of weight they require to achieve neutral buoyancy and so a buoyancy check should be carried out in sheltered water prior to further training, particularly if wetsuits are being used for the first time.

As this may be the students' first time in sheltered open water conditions, fitting masks and snorkels and the surface clearing of both is also included in this lesson.

Equipment

Each student's equipment should be prepared and checked by the instructor, at a 'fitting' session before starting the lesson.

Ensure you have additional weights and weight belts available near the entry/exit point for use if students' buoyancy needs adjustment. If weighting does need to be altered, exit the water and adjust weight belts as necessary: do not rely on carrying extra weights to put in students' snorkel buoyancy jacket pockets, which for some students might be uncomfortable and unbalance their in-water movement and which often results in weights falling out and getting lost!

1. **Briefing**

   Explain that the objective of this session is to establish what weight (if any) needs to be carried by students. Stress the importance of stopping if they have a problem. Cover all elements of a SEEDS brief, including the operation of snorkel buoyancy jackets if being used, signals between snorkellers, signals between surface cover and snorkellers, and 'instructional' signals.

2. **Entry into water – fitting fins**

   Depending on the venue and the type of entry, decide whether it is easier to fit fins before or after entry.

   - Demonstrate how to fit fins while sitting by the water, on steps, or in the water using a buddy or suitable fixed object for support
   - Remind students that when wearing fins they should walk sideways or backwards, whether in or out of water
   - Demonstrate an entry that is suitable for the site – remember the golden rule, instructor first in

3. **Fit and check mask and snorkel – shallow water**

   Depending on the venue and the type of entry, decide whether it is easier to fit mask and snorkel before or after entry.

   - Review and demonstrate how to demist and rinse out a mask (depending on venue this can be done prior to entry)
   - Review and demonstrate how to correctly position a mask on the face. Remind students that once the mask is on they will need to breathe in and out through the mouth. If students are wearing hoods, check that the mask strap has been adjusted.
     - Wet the face with a little water and clear any hair from the face, particularly the forehead
     - Hold the mask in one hand with the strap placed in front
     - Check the mask seal is clear and place the mask on the face

- Still holding the mask with one hand, draw the strap back over the head
- Check that no hair (or the edge of the hood) is trapped under the seal and that the strap positioning is neither too high nor too low on the back of the head, and is just tight enough to hold the mask in position. Involve the students in this check as part of being a buddy.
- Demonstrate how to check the mask seal for leaks. Using a buddy or fixed object for support take a breath, bend forwards and submerge the mask in water, straighten up, and show that there is no water in the mask

- Demonstrate how to clear water from the mask on the surface, in shallow water using a buddy or fixed object for support
  - Bend forward until the face is in water and, with one hand, gently ease the bottom of the mask seal to allow a little water to enter
  - Bring the head out of the water, hold the frame at the side of the mask with one hand, tilt the head slightly back, and at the same time gently ease the bottom of the mask seal so it just lifts off the face to break the seal allowing any water to drain away
- Demonstrate how to clear a fogged up mask using a buddy or fixed object for support:
  - Bend forward until the face is in water and, with one hand, gently ease the bottom of the mask seal to allow a little water to enter
  - Bend forwards so the mask lens is horizontal to the water and swish the water around inside the mask to remove the fog
  - With the head up, hold the frame at the side of the mask with one hand, tilt the head slightly back, and at the same time gently ease the bottom of the mask seal so it just lifts off the face to break the seal and allows any water to drain away
- Review and demonstrate how to secure the snorkel to give comfortable alignment. Slide snorkels which have no mask clip attachment under the mask strap at the side of the face. Position the snorkel so the mouthpiece is easily accessible.
- Remind students that once the snorkel is in the mouth it is difficult to talk. Because open water surface conditions are sometimes choppier than sheltered water, it is advisable to always keep the snorkel in the mouth and only remove it after exit from water.
  - Check that the snorkel position gives comfortable alignment and then allow students to get used to breathing in and out through the snorkel on the surface before the next step.
  - Review and demonstrate breathing through a snorkel, lying on the surface with the face submerged
  - Get the students to repeat while holding a buddy or suitable fixed object for support. Check each student in turn and give an underwater ‘OK’ signal, followed by an ‘up’ signal after four or five breathing cycles.
- Demonstrate the blow method of snorkel clearing:
  - Take a breath and tip the head forwards to submerge the snorkel and thus flood it.
  - Lift the head, tip it back slightly, breathe out forcibly to expel water, then continue breathing through the snorkel.

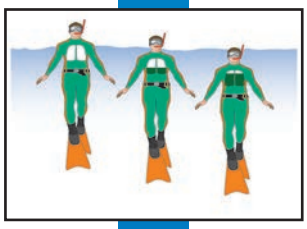
The above technique may need adapting depending upon the style of snorkel

used. Snorkels fitted with drain valves will require less effort to clear. Nevertheless, learning the blow technique will help students should the drain valve not be effective.

4. Buoyancy check and exit

Move into deeper water where students' fins will not touch the bottom when sinking just below the surface.

- Demonstrate a buoyancy check:
  - Hold the body upright in the water with fins pointing down. If necessary, hold lightly on to a buddy or fixed object for support
  - Breathe normally and maintain a position where the whole face is kept above the surface. Students should notice a small rise and fall in your position as you breathe in and out. If necessary, use a very gentle flutter kick to maintain position.
  - Repeat the above but this time remove any air from the buoyancy jacket, if worn, breathe out more deeply so that the body sinks just below the surface, then re-surface.



- Observe each student performing a buoyancy check, one at a time. Assess whether weights need to be altered and if they do, estimate how much less or more is required.
- Exit the water and adjust weight belts as necessary:
  - Remember the golden rule – instructor last out.
  - Decide whether it is easier to remove fins before or after exit given the nature of the venue and the type of exit you will employ. Ensure that students hold a buddy or suitable fixed object for support if they are removing fins in the water. Whether removing fins in or out of water, remind students how to walk safely with fins on: either backwards or sideways.
  - Assist each student who needs to alter their weighting. **Do not rely on putting extra weights in snorkel jacket pockets - they can be uncomfortable and unbalance the student's in-water movement, and they can fall out and get lost!** Get the students to check their weight belts for comfort afterwards, and reposition the weights as necessary.

5. Debrief

Use 'REAP' (Review, Encourage, Assess and Progression).

Debriefing is particularly important after this session as wearing additional equipment for the first time can be quite onerous for students. Explain that establishing correct weighting now will make the following lessons much easier.

Snorkel Diver Quiz

1. You should wash your mask, fins and snorkel after use
    a) In the sea
    b) In a washing machine
    c) In fresh water
2. So you can see underwater, your mask should be full of
    a) Water
    b) Air
    c) Spit solution
3. The glass in your diving mask should
    a) Break easily if you step on it by mistake
    b) Be tempered glass
    c) Bend as you put the mask on
4. You need a snorkel so that you can
    a) Breathe whilst you are underwater
    b) Breathe whilst looking down from the surface
    c) Breathe whilst you are travelling in a boat
5. Fins help you to swim like
    a) A crocodile
    b) An elephant
    c) A fish
6. A snorkeller frantically waving their arm at the surface is signalling
    a) The water's lovely so come on in
    b) Hi, I am having a great time
    c) They need help urgently
7. If you wear a wetsuit you may need a weightbelt to
    a) Help you leave the surface
    b) Immediately plunge you to the bottom of the sea
    c) Because it looks seriously cool
8. If you wear a weightbelt its most important feature is
    a) That the colour matches your fins
    b) That is has a quick release buckle
    c) That it needs at least two people to release it
9. If your mask mists up so you cannot see properly, you should
    a) Throw it away and buy a new one
    b) Swap it with someone else when they are not looking
    c) Clear it using spit or a little water
10. If you buy a pair of fins they should be
    a) Big enough for you grow into them in a couple of years
    b) Tight and already beginning to hurt your feet
    c) Comfortable and fit your feet
11. Your mask has a nose pocket to
    a) Keep your nose warm whilst snorkelling in cold water
    b) Prevent your nose getting bruised when you fin into a rock
    c) Allows you to equalise or 'pop' your ears when snorkel diving
12. You can equalise your ears by
    a) Squeezing your eyes shut
    b) Squeezing your ears
    c) Squeezing your nose and blowing gently or swallowing
13. If you cannot equalise your ears on a snorkel dive you should

a) Ignore the pain and continue to dive down
b) Hit yourself on either side of your head
c) Return to the surface

14. You should not dive with a cold because
a) Your tissues will get soggy in the water
b) Having a blocked nose makes it difficult to clear your snorkel
c) You could risk damaging your ear drums

15. The air around you is made up of approximately
a) 50% Helium, 50% Neon
b) 80% Nitrogen, 20% Oxygen
c) 70% Argon, 30% Helium

16. The pressure we feel on the earth's surface is generally referred to as
a) One ruler
b) One drainpipe
c) One bar

17. Did the Greek philosopher Archimedes discover the principle of buoyancy when he
a) Dived into his swimming pool
b) Was using teabags to make a pot of tea
c) Got into his bath

18. If you are floating on the sea surface you are
a) Positively buoyant
b) Negatively buoyant
c) Neutrally buoyant

19. When you snorkel dive the pressure on your body increases but is this caused by
a) The pressure of the air around you when you are on the surface
b) The pressure of air on the surface plus the water pressure around you on your dive
c) Just the water pressure around you on the dive

20. If you get cold whilst snorkelling you should
a) Ignore it because you will go numb and not feel anything
b) Think about a hot water bottle and a warm drink
c) Get out of the water

21. A wind blowing across the sea will
a) Smooth the water so the water stays flat
b) Lift the water into waves
c) Lift the water into a 'tidal bulge'

22. The tidal bulge is caused by
a) Eating a very large meal after snorkelling
b) The Sun's and the Moon's gravity affecting the sea
c) A large Navy ship sailing close to the shore

23. As waves break on the seashore they can create
a) Dandruff
b) Spray
c) Surf

24. What triggers your need to breathe
a) The level of hydrogen in your body
b) The level of nitrogen in your body
c) The level of carbon dioxide in your body

25. Before a surface dive you should
    a) Not breathe at all
    b) Hyperventilate, i.e. take lots of deep breaths
    c) Take a couple of breaths

26. Hyperventilation before a surface dive is dangerous because
    a) You could lose your snorkel underwater
    b) You could pass out under water
    c) You could get mask squeeze

27. Snorkelling with a buddy is a good idea because
    a) They can carry all your snorkelling kit
    b) They can be bossed around
    c) They can help if you have a problem

28. Surface cover is
    a) An umbrella you can carry whilst snorkelling
    b) Someone watching you from the shore or boat
    c) A large towel you can use after a snorkel dive

29. The golden rule when you surface dive in a buddy pair is
    a) One stays up on the surface whilst the other dives down
    b) You both hold hands and dive down together
    c) Ignore your buddy completely and do your own thing

30. A stride entry can be used when
    a) The water is very shallow and you can see the bottom
    b) You can see large rocks just below the surface
    c) The water is known to be deep and clear of obstructions

31. If you begin to feel seasick when travelling on a boat you should try to
    a) Go below deck, fix your eyes on a wall whilst eating a large greasy breakfast
    b) Remain on deck in the fresh air, as near to the centre of the boat as possible and fix your eyes on the horizon
    c) Go to the front of the boat where you will feel the boat moving up and down even more as you watch the waves

32. When planning a snorkel dive from the shore you should make sure
    a) That there is a comfy chair nearby that you can use when you put your fins on
    b) That you can always enter and exit the water easily
    c) That there is an ice cream van or parlour nearby

33. If you are snorkelling in the sea in a hot climate you should
    a) Protect your head with a bobble hat and scarf
    a) Protect yourself with a waterproof sunscreen
    b) Protect yourself by staying in the shadows

34. The first colour that fades when snorkel diving underwater is
    a) Blue
    b) Green
    c) Red

35. When finding marine animals underwater you should
    a) Look and then poke them with your snorkel
    b) Look but do not touch
    c) Look and then suddenly move so you scare them

36. Safe snorkelling diving involves
    a) Planning the dive and diving the plan
    b) Planning the dive and then totally ignoring it
    c) Not planning the dive at all

37. There is a word you can use when giving a snorkel dive brief which helps to cover all the elements of your dive plan, is it
    a) Pips
    b) Seeds
    c) Skins

38. If snorkelling from a large diving centre's snorkelling boat on holiday you should make sure that someone on the boat
    a) Tidies up and polishes your snorkelling kit
    b) Counts all the snorkellers in and when they get out of the water
    c) Has a dry towel ready for when you get out of the water

Snorkel Diver Quiz Answers

1. c
2. b
3. b
4. b
5. c
6. c
7. a
8. b
9. c
10. c
11. c
12. c
13. c
14. c
15. b
16. c
17. c
18. a
19. b
20. c
21. b
22. b
23. c
24. c
25. c
26. b
27. c
28. b
29. a
30. c
31. b
32. b
33. b
34. c
35. b
36. a
37. b
38. b

Advanced Snorkeller Quiz

1. You should build up your depth or time experience on snorkel dives by
    a) Finding the deepest water you can and not worrying about it
    a) Buying a longer pair of fins
    b) Wearing a weightbelt or, if you wear one already, adding extra weights
    b) Doing it in progressive steps

2. When building up your snorkelling experience your buddy should be
    a) A snorkeller with at least as much experience as you
    b) A snorkeller at the beginning of their snorkel training
    c) Anyone as long as they let you do what you want to do
    d) Someone who is not a snorkeller but a good swimmer

3. The golden rule when surface diving is
    a) Both down together
    b) Both down together but one slightly higher in the water
    c) One up, one down
    d) One in the boat, one down

4. If entering the water from a pontoon where the depth of water is unknown you should use a
    a) Forward roll
    b) Stride entry
    c) Backwards roll
    d) Silent (slide) entry

5. An SMB is a
    a) Surface Manual Buoy
    b) Surface Master Buoy
    c) Surface Mobile Buoy
    d) Surface Marker Buoy

6. As an Advanced Snorkeller, being a ‘Role Model’ means
    a) You will be worshipped by every other snorkeller you meet
    b) The way you do things will be copied by less experienced snorkellers
    c) You are the best person to show how to do forward rolls
    d) You will be asked to pose for celebrity magazines

7. Surface cover is
    a) A large tent on the shore or awning on a boat under which you can change
    b) Someone monitoring you and your buddy at all times from a boat or the shore
    c) A blanket that covers the sand on a beach and therefore protects your kit
    d Someone sitting on a boat reading whilst you and your buddy go snorkelling

8. A dive brief should follow
    a) PIPS
    b) NUTS
    c) SEEDS
    d) HUSKS

9. When snorkelling with a less experienced snorkeller you should
    a) Plan the dive with them and then do the snorkelling you want to do
    b) Plan the dive with them and involve them throughout the dive
    c) Plan the dive with them and then ignore them once you are in the water
    d) Plan the dive without them and just expect them to tag along

10. SEEDS stands for
    a) Standard, Exercise, Equipment, Discipline, Signals
    b) Safety, Exercise, Equipment, Disclaimer, Standard
    c) Safety, Exercise, Equipment, Discipline, Signals
    d) Safety, Exercise, Equipment, Discipline, Standard

11. The easiest entry from a RIB is a
    a) Stride entry by standing and balancing on the engine
    b) Forward roll entry by standing and balancing at the front of the boat
    c) Backward roll entry by sitting on the tubes at the sides of the boat
    d) Jump entry by using the tubes as a trampoline

12. If your buddy is wearing a snorkelling vest and gets cramp or is too exhausted to fin, your first action should be
    a) Tow them to the nearest point of safety
    b) Inflate their snorkel vest to provide additional buoyancy
    c) Keep a close eye on them until they have recovered
    d) Leave them to sort it out themselves

13. When snorkelling from a RIB or small hard boat you should generally
    a) Take a large kit bag so you can change on the boat
    b) Put on all your snorkelling kit, including mask, fins and snorkel before getting in the boat
    c) Change into your snorkelling suit before getting on the boat and have your snorkelling vest/lifejacket, fins, mask and snorkel stowed a small bag
    d) Change into your snorkelling suit and snorkel vest/life jacket before getting on the boat and have your other equipment stowed in a small bag

14. When snorkelling from a large commercial snorkel/dive boat it is essential that the crew
    a) Help you kit up and dekit
    b) Provide drinks and food
    c) Count snorkellers into and out of the water
    d) Have clean towels ready when you get back on board

15. The special potential risk when diving on a reef that drops away into deeper water is
    a) Going too deep without being prepared
    b) Ignoring your buddy
    c) Being tempted to stick your hand in all the nooks and crannies
    d) Holding onto the reef

16. If your buddy gets cramp in their calf muscle and has sufficient buoyancy you can help to ease the cramp if you
    a) After telling them to lie back and relax, hold the affected leg's fin and give it a good shake to stretch and relax the calf muscle
    b) Tell them to fin in small circles to alleviate the cramp
    c) After telling them to lie back and relax, remove their fins so they can swim to a point of safety
    d) After telling them to lie back and relax, hold the affected leg's fin and push towards casualty's knee so the calf muscle is stretched

17. The best site for a night snorkel dive is one where
    a) You cannot see the bottom
    b) Visibility is restricted
    c) You can see the bottom
    d) There are lots of other water users

18. To attract your buddy to something of interest underwater on a night dive you should
    a) Switch your torch beam on and off quickly
    b) Switch your torch beam on and off slowly
    c) Rapidly wave your torch beam from side to side
    d) Circle your torch beam around the point of interest

19. Drift snorkelling is best carried out in a
    a) Fast current in deep water
    b) Slow current in deep water
    c) Slow current in shallow water
    d) Fast current in shallow water

20. An SDM is
    a) A Snorkel Dive Marker
    b) A Snorkel Dive Manager
    c) A Simple Dive Marker
    d) A Snorkel Deep Marker

21. The Moon's gravity causes a tidal
    a) Belt
    b) Buffer
    c) Bulge
    d) Bank

22. In deep water, wave action moves water
    a) Up and down
    b) Forwards
    c) Backwards
    d) From side to side

23. As well as the Moon's gravity the tides are influenced by
    a) The stars
    b) The planet Jupiter
    c) Satellites circling the Earth
    d) The Sun

24. You can find out information about the tides from
    a) Tide tables
    b) Tide marks
    c) Tide lines
    d) Tide boards

25. When the Moon and the Sun are in line they cause
    a) Winter tides
    b) Autumn tides
    c) Spring tides
    d) Summer tides

26. The chart datum on a snorkelling site is 2m. If low water is given as 1.5m what will be the expected depth at low water?
    a) 1.5m
    b) 2.5m
    c) 0.5m
    d) 3.5m

27. Tides are very important when snorkelling from the shore with regard to
    a) Changing facilities
    b) Entry and exit
    c) Water temperature
    d) Access to the shore

28. The smallest tidal range occurs on
    a) Spring tides
    b) Low tides
    c) Neap tides
    d) High tides

29. A position line used to help mark a snorkel site is called a
    a) Transit
    b) Transfer
    c) Transect
    d) Transept

30. When snorkelling at an unknown site your first action should be
    a) Send another buddy pair in first to check the site out
    b) Seek local knowledge and advice
    c) Ensure everyone has food and drink
    d) Ensure everyone is kitted up before the first snorkellers enter the water

31. Which of the following would be a good choice of object to line up with a mast on top of a hill, to make a transit for use at sea?
    a) A bull in a field near the shore
    b) A red car parked on the sea front
    c) A flag pole on the sea front
    d) An ice cream van on the sea front

32. The minimum number of transits needed to mark a site is
    a) One
    b) Two
    c) Three
    d) Four

33. The magnetic needle in a compass always seeks
    a) North
    b) South
    c) East
    d) West

34. A compass is usually filled with
    a) Ball bearings
    b) Water
    c) Alcohol
    d) Oil

35. Using features underwater to ‘map out’ a site is called
    a) Leadership
    b) Pilotage
    c) Steerage
    d) Management

36. The key information you need to locate a lost object underwater is
    a) A description of the person who lost the object
    b) A description and approximate value of the object
    c) A description and approximate location of the object
    d) A description of the sea state at the time of the loss

37. A distance line is a line
    a) On the seashore at a measured distance away from you
    b) In the water marking the distance to the edge of a snorkelling site
    c) On a reel connected to a datum and used on a circular search
    d) On a reel used to measure your distance from the shore

38. The main components of a shot or datum are
    a) A weight connected to a buoy
    b) A line connected to a buoy
    c) A line connected to a weight
    d) A line connected to a weight and buoy

39. Deploying a shot weight using a reel has which main advantage?
    a) It is easy to hold with or without gloves
    b) It is easy to adjust the length of the line relative to depth
    c) You don't have to watch what you are doing, just let the line run out
    d) It only needs one snorkeller to hold it

40. If four snorkellers are carrying out a circular search all using the same distance line, who fins the furthest?
    a) The snorkeller on the inside nearest to the shot line
    b) The snorkeller next to the one on the inside
    c) The snorkeller on the outside holding the distance line reel
    d) The snorkeller on the inside of the outside snorkeller

Advanced Snorkeller Quiz Answers

1. d)
2. a)
3. c)
4. d)
5. d)
6. b)
7. b)
8. c)
9. b)
10. c)
11. c)
12. b)
13. d)
14. c)
15. a)
16. d)
17. c)
18. d)
19. c)
20. b)
21. c)
22. a)
23. d)
24. a)
25. c)
26. d)
27. b)
28. c)
29. a)
30. b)
31. c)
32. b)
33. a)
34. d)
35. b)
36. c)
37. c)
38. d)
39. b)
40. c)

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