Introduction to Scuba and The Basic 6

Remind students of 3 of the 5 Golden Rules during SEEDS:

Rule #2 Know your available gas at all times. You do not want to run out of gas.
20 bar limit for pool.

Rule #3 Maintain neutral buoyancy within the normal span of breathing throughout the dive.

Rule #4 Never hold your breath when ascending on compressed gas. Lung expansion.

In water training time is precious.
To assist with timings the kit can be configured and ready for students to use for the first lesson.
Separate kit configuration lessons can be arranged later if need be.
All students to collect their kit from the stores and stow pool side as directed by the pool manager/TO/ATO.

OBJECTIVE:

At the end of this session students should:
Know how to assemble and check their scuba equipment (if included here)
Know how to don scuba equipment and conduct a buddy check
Be able to quickly and effectively operate the buoyancy controls of their BC
Have started to develop the traditional flutter kick finning action
Be comfortable breathing from a demand valve underwater
Perform the Basic 6
(If time allows: Have begun to develop buoyancy control skills)
(If time allows: Have achieved a horizontal trim position underwater)

SEEDS BRIEFING (or EEDSS)

Cover all elements of a SEEDS brief in a logical sequence. Reassure students that less haste at this point will mean more speed overall.
Let's try EEDSS

Exercise
Very briefly outline the objectives of the lesson, following the lesson objectives. Do not talk through each skill in detail, this will be done by demonstrating in the water. To minimise any nervousness, inform students that initially they will be performing these underwater skills in standing-depth water.

Equipment
List the equipment required for the lesson: basic equipment including wetsuits boots if fins dictate, scuba set, weight belt including weights if necessary. Pool suit or shorty wetsuit if need be.

Discipline
Ensure that students understand the importance of watching each of your demonstrations and only attempt to repeat a skill when prompted by you. Emphasize the importance of keeping close to you while practising skills. when practicing ascents, employ a policy of 'one-up all-up', to maintain class control and to ensure students can clearly see instructor demonstrations.

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

Safety

As this is your student's first encounter with water pressure, you need to stress the importance of ear clearing, mask equalisation and that they breathe normally at all times when using scuba, taking particular care on ascent. **Rule #3**
Also point out any relevant hazards in particular the manual handling of heavy kit and slip, trips and falls. Demonstrate how to lift and carry a scuba set. If required 'press the easy' button by sharing loads.

KIT CONFIGURATION AND FUNCTIONAL CHECKS

Visual inspection
All equipment should be visually inspected prior to assembly.
Check for

- Hose damage. Ensure hose protectors correctly positioned if fitted
- Mouth pieces present, good condition and free from splits or tears and are firmly attached
- Hoses are secure and not loose.
- No exposed threads - first and second stages, submersible pressure gauge (SPG)
- No loose connections – BC, especially valves
- Cylinder valve damage and cylinder in test
- Any general material damages

Fit BC to cylinder
Ensure to demonstrate how to re-thread the cam band into the buckle when it has been completely unthreaded.
Slip BC cam band over cylinder, to a height that you judge will enable the student to achieve a good horizontal trim position underwater.
Close buckle(s), ensuring cylinder is firmly secured and cannot slip.
Ensure any wing nuts are tight.

Fit regulator to cylinder
Fix first stage to the cylinder valve, checking for O-ring. No need to over-tighten. If DIN connection, ensure correct alignment to tighten.
Ensure regulator is fitted to cylinder with primary second stage the correct way up for use and over the right shoulder.
Make all necessary connections to BC, including attaching direct feed hose.

Carry out functionality checks
Valuable in-water time can be saved if equipment functionality checks are taught in a separate dry session before the in-water teaching. Instructor may perform these initially.

- *Pressure check:*
  Turn cylinder valve on slowly, holding the SPG facing the cylinder. Check SPG to ensure cylinder has adequate gas pressure.
- *Regulator operational check:*
  Take several breaths from both primary and AS demand valves, while observing the SPG. Ensure inhalation and exhalation resistance is low and valves breathe smoothly. The SPG needle should not fluctuate. If there is a strange taste or smell then the cylinder should be quarantined.
- *Regulator leak check:*
  Turn cylinder valve off and check for leaks by both listening and observing the SPG needle. It should remain static over a 1 minute period.

- *Breathe down regulator:*
  Breath down the gas while cylinder valve is closed. Watch the needle for smooth movement without sticking. Vary the breath down rate and ensure the needle behaves as expected. It should return to zero. Attempt to breathe from both primary and AS demand valves to check for inward leaks. If so then the diaphragm is likely damaged. Do not use. Cylinder valve to remain closed if to be transported and turned on, slowly as usual, prior to use.

- *BC operational check:*
  Orally inflate BC. Ensure correct operation and inflation technique. Inflate so nearly full.
  Continue using power inflator until the over pressurisation valve (OPV) operates. Release the power inflate button. The OPV should shut and maintain a positive pressure inside the BC. Check over a period of 2 mins.
  Slowly release the pressure using the convoluted hose followed by any other vent valves. Ensure smooth operation of all valves. Repeat if unsure. *(Note this section is not in the IM)*

KIT UP AND BUDDY CHECK
DRY RUN AND ENTRY

Kit up in standing depth or poolside as appropriate. Demonstrate the safe handling and carrying of heavy kit.

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

Fit scuba equipment
Demonstrate and then supervise buddies helping each other to kit up. Care must be taken to avoid injury when lifting heavy cylinders. 2 person lift.
Note: this is especially relevant if a BC with integrated weight systems is being used.

Buddy check
Conduct a brief but thorough buddy check.
Use BAR or another appropriate acronym.

Dry run, demand valve clear by exhaling
Breathe in.
Remove demand valve from mouth, simulate allowing mouthpiece to flood.
Turn demand valve to point mouthpiece downwards to stop free flow.
Replace demand valve in mouth and exhale to clear.

Dry run, demand valve clear with purge button
Breathe in. Remove demand valve from mouth, simulate allowing mouthpiece to flood. Turn demand valve to point mouthpiece downwards to prevent free flow.
Hold demand valve at eye level, gently press purge button to clear water, bring the gently bubbling mouthpiece down and replace in mouth.

Fit mask and regulator
Demist mask with saliva or defogging agent and rinse with water. Position mask on face, ensure correct seal, secure using strap. Place regulator in mouth. Mask and regulator should always be in place before entering the water.

Entry
Lead the students down a ladder or by wading into waist-deep water. If a ladder is used, then demonstrate the principle of 'three-point'

	contact (moving only one hand or foot at any one time) to prevent falling from ladder while wearing heavy equipment. **Fit fins, standing depth**. Lean against buddy or a suitable fixed object for support while fitting fins. Remember to make a figure 4 with legs. Only move around by shuffling backwards and sideways once fins fitted.
USE OF BC AND BC CONTROLS AT THE SURFACE	**Buoyancy control – in standing depth** This exercise introduces the controls of the buoyancy compensator. It allows students to experience the feeling of increasing and decreasing buoyancy provided by their BC at the surface and the support it gives. **Stress that this is not a life jacket. It does not automatically keep you in a face out of water attitude.** **Demonstrate BC controls at the surface** Inflate BC fully using direct feed. Breathing from the demand valve, crouch down until supported by BC. Vent BC until the chin touches the water surface. Raise corrugated hose making mouthpiece highest point of BC which is normally ear height. No need to over stretch the corrugated hose. Re-inflate BC fully using direct feed. Repeat exercise, venting from BC mouthpiece using both hands. Inflate BC using mouthpiece. Deflate and repeat. Introduce students to the kidney dump and position. Fully inflate using mouthpiece and deflate using kidney vent. Lie on the back and front with BC fully inflated. Use otter rolls to turn. Lie flat, arms crossed over infront of body, use fins to roll over to face up/face down position
SURFACE SWIMMING WITH BOUYANCY CONTROL	Finning exercises, which should start and end in standing-depth water, give students a chance to practise finning in different attitudes, develop dexterity with BC controls and strengthen their finning action. The traditional flutter kick will be the first form of propulsion introduced. Emphasise that this is good for speed, treading water and rescue. The frog kick is the more environment friendly propulsion technique and will be introduced later as the choice of finning technique.
SURFACE SWIMMING	**Swim on back with BC inflated, on the surface** Inflate BC fully by mouth, then breathing from demand valve, use the traditional flutter kick and fin lying back in the water to minimise drag, looking round to check direction. Check flutter kick finning action – swing from the hips, minimal knee bend, pointy toes. Repeat with BC only partly inflated. Check finning action. Develop fine control of the BC by venting in short bursts using both BC mouthpiece and dump valve, until waterline is at chin level, then re-inflate using direct feed. Swim about 25m, deflating/inflating BC twice during the distance. Check finning action. Note: Task loading on students will increase, as they concentrate on buoyancy control, which may cause their finning action to deteriorate. Fin strokes should be long and gentle. Correct ineffective cycling action and excessive knee bending. Where necessary extend the distances to give the students more practice.

Swim on front with BC inflated, on the surface
Breathing from demand valve, partly deflate BC, re-inflate as necessary using direct feed to establish a comfortable level of inflation for swimming on the front.
Swim about 25m. Check finning action.

Swim on side with BC inflated, on the surface
Breathing from demand valve, partly deflate BC, re-inflate as necessary using direct feed to establish a comfortable level of inflation for swimming on the side.
Swim about 25m. Check finning action.
Note: Finning on the side allows for a greater amplitude and more power.

THE BASIC 6

Static kneeling position
Emphasize that this is the position used only at the start of training to allow the student to attempt the Basic 6 without task loading.
Progression will be made through training to carry out the skills while neutrally buoyant in the basic trim position.
The student can kneel down on one or both legs depending on comfort levels. The legs should be shoulder width apart to form a stable base.
Having slight negative buoyancy will also help in providing a stable base at the start.

The Basic 6

1. Pressure gauge check.
2. Regulator clearing. Both ways.
3. Switch to back up.
4. Regulator removal and recovery.
5. Mask clearing.
6. Mask removal and recovery.

The above order is deliberate and puts the easier skill first giving the student a sense of achievement if the latter skills prove move difficult. This also emphasises **Rule#1** by doing the pressure gauge check first. As a matter of course the pressure gauge check should be performed before any skill set to confirm enough gas available.

1. PRESSURE GUAGE CHECK

Submersible pressure gauge check (SPG)
Demonstrate Mr Spock, pointy finger, bolt snap thumb to retrieve and stow SPG.
Show buddy SPG. Develop action by maintaining original one handed grip.
Confirm pressure to buddy using one hand numbering system.
This reinforces that both student and buddy agree the pressure observed.

2. REGULATOR CLEARING

Regulator clearing by exhaling
This exercise picks up on the dry run conducted before entering the water.
Breathe in.
Remove demand valve from mouth, allowing mouthpiece to flood.
Turn demand valve to point mouthpiece downwards to avoid free flow.
Replace demand valve in mouth and exhale to clear.
Perform twice.
Note: When students attempt these exercises for the first-time, instructors should have an AS demand valve ready, in case a student has difficulty recovering their own.

Regulator clearing with purge button
Breath in
Remove demand valve from mouth, allowing mouthpiece to flood.
Turn demand valve to point mouthpiece downwards to avoid free flow.
Hold demand valve high, gently press purge button to clear water, bring the gently bubbling mouthpiece down and replace in mouth.
Perform twice.

3. SWITCH TO BACKUP

Switch to back up

Remove AS from stowage.
Breathe in.
Remove main demand valve from mouth, while slowly exhaling a small stream of bubbles.
Place AS demand valve in mouth and exhale to clear.
Demonstrate the three hose routing methods.

- under the left shoulder + swan neck hose
- over the left shoulder + swan neck hose
- over the right shoulder, more natural placement in mouth

Repeat twice ensuring that AS is correctly stowed between attempts.
Note: instructor should ensure demand valve mouthpiece is in the correct orientation for the student to use.

4. REGULATOR REMOVAL AND RECOVERY

Regulator removal and recovery

Breathe from AS demand valve.
Hold main demand valve out to side and drop.
Roll body sideways and lean right shoulder forwards (assuming demand valve comes over right-hand shoulder).
Sweep arm back close to side of cylinder and then outwards and forwards to encircle demand valve hose to recover it.
Repeat until performed correctly.
Repeat retrieval exercise above and switch back to main demand valve.
Clear using one of the two methods outlined
Return AS to stowage location.

5. MASK CLEARING

Mask clearing – in standing depth

Many students will experience anxiety or apprehension about these exercises. To allay these fears, break the skills down into small steps, ensuring success before advancing to the next stage.

Breathing without mask, nose submerged

As a precursor to later mask clearing, this exercise gives the students confidence that they can easily breathe through their mouth while their nose is submerged.

Inhale/exhale through demand valve, in standing depth water, mask removed.
Slowly submerge until the nose is below the water level.
Inhale and exhale through demand valve.
Once a comfortable breathing rhythm has been established, practice inhaling from the demand valve and gently exhaling via the nose.
Note: Some people find this instinctively difficult to do, putting the tongue to the roof of mouth will assist.

Mask clearing, face partially submerged (no strap fitted)

If wearing contact lenses keep eyes shut
Consider using the double demonstration technique to show the skill from the side (shows mask tilt) and front facing (shows grip and clear). Repeat each stage until performed correctly.

Stand with mask removed, breathe in from the demand valve.
Slowly submerge until the nose is below the water level and gently allow a slow stream of bubbles to flow from the nose.
Brush back hair and slowly place the mask on the face, ensuring the top of mask makes contact with the head first.
Continue to gently exhale through the nose until the mask is completely free from water.

Mask clearing, face submerged (no strap fitted)
Repeat exercise with whole face submerged.
Once the mask is completely clear, pull the mask strap over the head to secure the mask in place.
Consider using the pincer grip on the strap on the side of the mask by the ear to untangle the strap if necessary.

Mask clearing, standing depth (no strap fitted)
Descend into standing-depth water and kneel on the bottom with head just beneath the water surface.
Flood and remove mask.
Identify nose pocket to check mask is correct way up, place strap in front of mask lens.
Clear hair from face and replace mask on face.
Clear mask of water by bubbling air gently out of the nose smiling so there is a small gap either side of the nose to allow water out may help.
Repeat a few times as practice before replacing the strap.

Note:
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 may require the head to be tilted forward while large masks with a deep front section may require tilting the head back.

Partial-flood mask clearing, standing depth (strap fitted)
Once students have mastered mask clearing without the strap fitted, move on to the more normal diving practice of clearing a small amount of water from the mask with the strap fitted.

Lift lower skirt of mask from face to allow a small amount of water to enter. A single finger to point out the level of water required.
Hold top edge of mask against forehead.
Breathe out steadily (but not forcibly) through nose and clear mask of water as above.
Smiling so there is a small gap either side of the nose to allow water out may help.

Progressive-flood mask clearing, standing depth (strap fitted)
Alternatively tilt head forward and lift upper corner of skirt away from face to allow water to enter mask.
Clear mask as above.

Full-flood mask clearing, standing depth (strap fitted)
Lift lower skirt or upper corner of mask from face to fully flood mask.
Clear mask as above.

6. MASK REMOVEL AND REPLACEMENT

Mask removal and replacement
Begin in the static kneeling position as before.
Holding the mask with one hand fully flood the mask.
With the other hand remove the strap by pulling it over the head towards the front.
Breath normally through the mouth
Ensure the mask is correctly orientated prior to replacement by using the thumb of on hand to locate the nose socket of the mask. It should be at the lower part of the mask.
Clear the hair from the face
Replace the mask ensuring the skirt is flush to the face and it is not distorted
Clear mask before replacing strap.

BOUYANCY CONTROL	This exercise introduces control of buoyancy through a combination of correct weighting, use of the BC and breathing. It allows students to experience the feeling of increasing and decreasing the buoyancy provided by their BC, an awareness of how their breathing can affect their buoyancy, and develops familiarity with the BC controls while underwater. **Descend and adjust for neutral buoyancy, lying flat on the bottom (fin pivot)** In standing depth water, use BC vent control to descend and lie on the bottom. Inflate/vent BC in small bursts, with BC control held high when venting. If necessary, adjust a student's weight by adding or removing weight from weight belt or purpose-designed weight pouches. Note: Where this is not practical, the use of clip-on weights, which can be easily and securely attached to D-rings on the weighting system is recommended. If it is necessary to add weight to a BC pocket this should be limited to a maximum of 2 kilograms. Ensure that this cannot accidently come free during the session and that weighting systems are properly adjusted for subsequent dives.
CAN YOU STAY STILL	Adjust buoyancy as before by inflating/venting BC in small bursts and using breathing for fine control. Ensure BC control held high when venting. Hover clear of bottom Release BC controls and keep hands still in front of you. Avoid touching the bottom with hands, avoid sculling with hands. Introduce weight held in hands moving forward/beckward for trim if need be. Introduce the kidney dump if fitted to remain in trim during venting
EXIT AND DEKIT	**Remove scuba – in standing depth or poolside** As for kitting up, where the location permits, in a swimming pool for example, de-kitting while in standing- depth water will make students' first experience of scuba more comfortable. Best practice is to keep demand valves in place until scuba kit is removed. **Remove fins** Lean on buddy or other suitable fixed object for support. Use figure 4 position for stability. **Exit water** Leave the water by wading out. Or if using a ladder, demonstrate climbing the ladder using the principle of three-point contact. Return to the water and ask each student in turn to climb the ladder and wait beside it, positioned a safe distance from the water's edge. Ensure you and other students stand well back in case a student falls from ladder. Take particular care if students need to exit the water in scuba. **Remove weight belt** Remove weight belt, securing the free end to prevent weights sliding off, or remove integral weights. Take care to place weight belt down carefully and not drop it on toes or pool tiles. Note this is performed before kit removal to highlight any issues that may occur in practice. **Remove scuba kit** Buddies assist each other to remove scuba kit. Ensure it is laid down on the pool side, demand valves placed on top.

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

Wash kit and stow to dry
Explain the importance of rinsing all dive kit in fresh water, if facilities available, even after pool use. Store kit
Turn off gas, purge regulator and disassemble scuba equipment.
Fit regulator dust caps.
Emphasise the importance of stowing correctly to dry. Empty any water and inflate BC. Hang neatly and correctly. Hoses laid in natural position.

REAP DEBRIEF

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

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

Encourage
Praise good performance. Provide support and comfort if things haven't gone so well.

Assess
Offer constructive feedback to enable students to identify areas for improvement.

Preview
Explain how students will further develop their skills in the next module.

SKILLS PERFORMANCE STANDARD

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

Use of mask, fins and snorkel
Students should be able to fit and use basic equipment safely for surface swimming in a sheltered-water environment. The traditional flutter kick should be smooth and not rushed with a clean action.

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

Buoyancy Compensator Use
Students should be able to adjust buoyancy at the surface by inflating and deflating efficiently with both hands.

Pressure gauge check
Students should be able to recover, read and stow the pressure gauge with one hand. They should show their buddy and then confirm the pressure using the numbering system. Again with one hand.

Regulator clearing, switch to back up, removal and recovery
Students should be able to successfully flood and clear the regulator, switch to back up, drop, recover, clear and replace their regulator and recommence normal breathing.

When the demand valve is removed, it should be orientated with mouth piece down. When the demand valve is not in the mouth, the student should be slowly exhaling a small continuous stream of bubbles.
The demand valve should be recovered calmly without signs of panic.

Mask clearing
Students should be able to flood and clear their mask of water and progress to full removal and replacement.
At this stage of their training students may need several attempts to achieve a full clear. One or two hands maybe used to hold the mask while clearing.
The seal should be checked to ensure it is flat and that no hair is trapped.

Signals
Students should be able to use and understand the signals for ‘OK’, ‘stop’, ‘up’, ‘down’ and should be able to repeat clearly. They should understand the teaching signals ‘you watch me’ and ‘you do’.