Observing the underwater world, in complete safety

Whether on or under the surface of the water, safety education is a wonderful tool for developing correct and responsible behaviors, both individually and in a group, aimed at sensing possible risks, and preventing accidents from a very young age.

We start diving for the thrill: being able to float in the emptiness as if we were flying, interact with fish and fascinating marine creatures, enjoy ever-changing colors and reflections. Those who dive benefit from a unique, privileged perspective, and children and teenagers can learn a lot from being in contact with the underwater world.

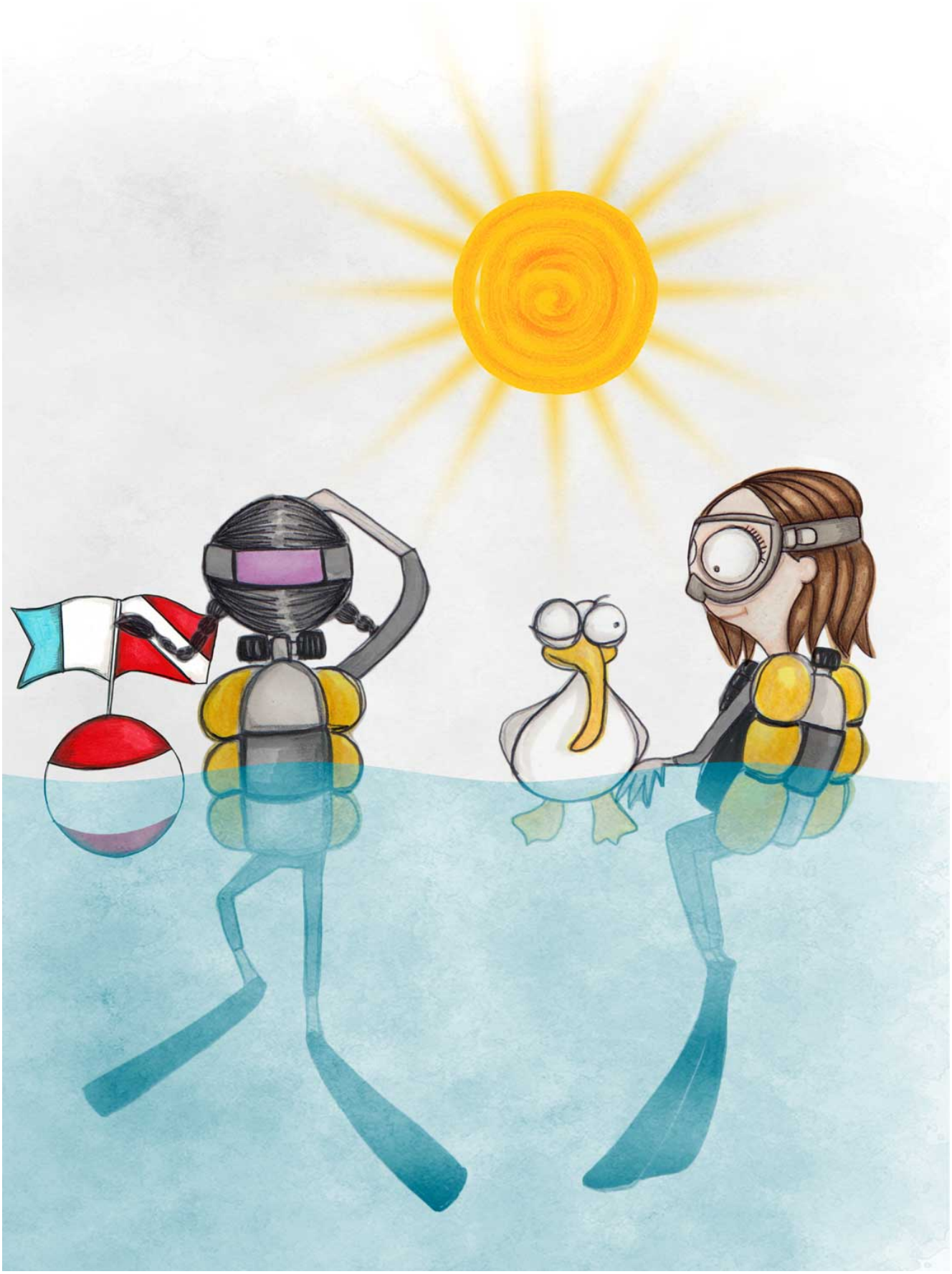
Young divers: characteristics

Generally, children are very comfortable with water and are healthy, which are essential aspects to approaching scuba diving activities. They burn a lot of calories, and this heat production increases their cold tolerance. When they start feeling cold, though, they lose heat faster than adults, and without an appropriate thermal insulation, they are more susceptible to hypothermia. Furthermore, their Eustachian tube is smaller and doesn't completely drain external liquids, putting them at greater risk of getting ear infections.

However, the most important aspect to consider when referring to very young divers is probably the psychological and cognitive one. It is necessary to keep in mind that children are not small adults, and that they go through a process of growth and evolution, both physical and psychological. This includes their ability to follow adults and learn their teachings, comprehend invisible risks, and be able to manage stressful situations.

Most diving organizations include scuba diving training programs for children starting from a minimum age of 8, 10 or 12 years old. These courses take into account the physical, physiological, and psychological challenges relevant to children, recommending appropriate equipment and techniques, exposure limits, and strict adult supervision.

The Divers Alert Network (DAN) is proud to have been on the side of divers, whether young or "vintage," for over thirty years, to assist and advise them. Thus, the following is a list of rules or simple recommendations to enjoy diving together in complete safety.



Fitness to dive for the youngest ones: the basics

In order to facilitate the instructor’s task when evaluating a young aspiring diver, here are some aspects to take into account:

– Psychological maturity: calm and rational, the child is not prone to emotional outbursts and does not get distressed in new situations. The child understands the concept of risk.

– Educational maturity: the child is able to learn independently and to follow the theory part of the diving course. The child asks questions and is able to apply in practice the learned information.

– Physical maturity: the child should be able to swim and feel comfortable in the water. On the market, it is difficult to find diving equipment suitable for the youngest ones, so children should be physically ready to use whatever equipment is available in a proper and safe way.

– Desire to dive: this should come from the child, not the parent. Which one would you prefer, a father who asks the instructor to teach his child, or the child who asks the instructor to teach him/her to dive, just like daddy?

– Medical fitness: asthma, serious obesity, hyperactivity, and ADHD (Attention Deficit Hyperactivity Disorder) are medical conditions that are usually incompatible with diving. It is always a good idea to discuss your plans with a doctor who is a specialist in diving medicine.

The 10 golden rules for recreational diving

1. Take diving courses, BLS (Basic Life Support), Oxygen First Aid and update courses with qualified instructors
2. Get a yearly diving medical exam (also in the event of a disease or injury or if you are on medication)
3. Keep hydrated by drinking water or oral rehydration salts regularly. Avoid alcohol and strenuous physical efforts, before and after a dive.
4. Always check that your equipment and your buddy’s are in good condition and perfectly functioning. Make sure that it is suitable for the planned dive
5. Wear a BCD, carry two regulators, an air pressure gauge, a manometer, and a knife; even if you use a diving computer, take with you a depth gauge, a watch, and diving tables
6. Always dive when weather and sea conditions are favorable, with adequate assistance on the surface, and with a buddy. Use the SMB (Surface Marker Buoy)
7. Dive within the limits of your certification. Avoid “yo-yo” profiles and never hold your breath while ascending
8. Ascend at a speed of 9-10 meters per minute, use the most advanced decompression models, and choose the most conservative settings
9. In the event you suspect Decompression Sickness (DCS), immediately administer oxygen at 100% with an appropriate regulator, and for the time necessary. Do not attempt recompression procedures in the water. Call DAN!
10. Before flying, follow DAN recommendations: wait at least 12 hours after a single dive, and at least 24 hours after repetitive dives and/or decompression dives

Further recommendations:

– Make sure that a first aid kit and an oxygen kit are readily available

– The onset (even late) of symptoms after a dive requires immediate specialized medical care. Call DAN!

Dehydration and diving

Water is fundamental for life: we are made for 70% of water! When we lose more water than what we take in, we favor dehydration, a condition that could cause us problems such as headaches, irritability, confusion, fatigue, muscle spasms.

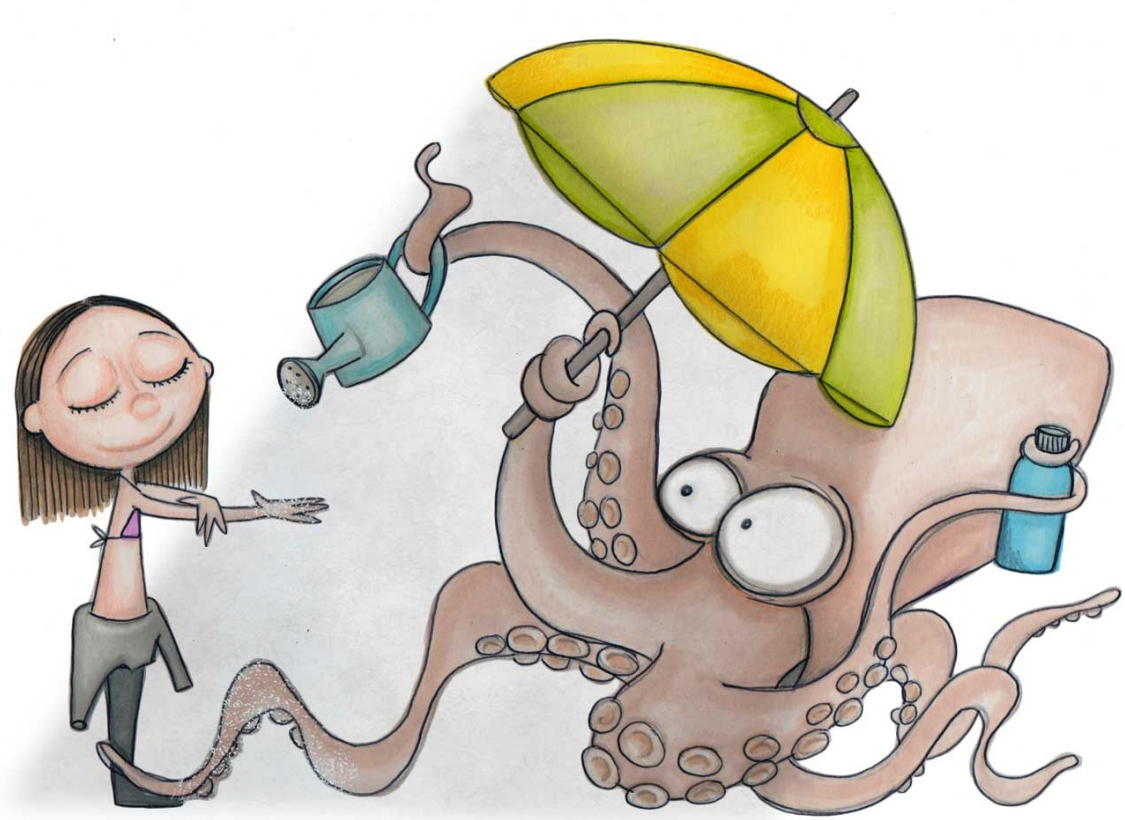
If staying hydrated is important for everyone, it is even more so for divers. In fact, during a dive our body must be fully efficient, and all the organs (which are made up in great part of water) must work perfectly well.

Here are some factors that favor dehydration:

– Sun, heat, sweat
Often divers travel to tropical countries, where the climate is hot, sunny, and sometimes humid. These conditions favor sweating. When we sweat, we lose liquids and get dehydrated. If we get sunburned, we lose liquids even faster. When there is a sunburn, the skin becomes red and hot; our body reacts sending fluids to the skin. The sun and the wind cause these fluids to evaporate, and thus we lose even more.

– Seawater
At the beach, when we get out of the water, and we dry ourselves, some salt crystals stay on our skin. These crystals absorb and trap water molecules, which then evaporate due to the sun and wind, further increasing dehydration.

– Dives
Even if the wetsuit keeps us warm enough in the water, it makes us sweat if worn for long periods of time on the surface. Finally, the air in the tanks is dry, and our lungs need to make it more humid. Doing this, we lose fluids.



How to prevent dehydration:

– The easiest thing to do is to drink lots and lots of water

– Protect ourselves from the sun and sunburns

– If it’s hot, do not wear our wetsuit until we are ready to dive

– At the end of each dive, rinse the salt off with fresh water

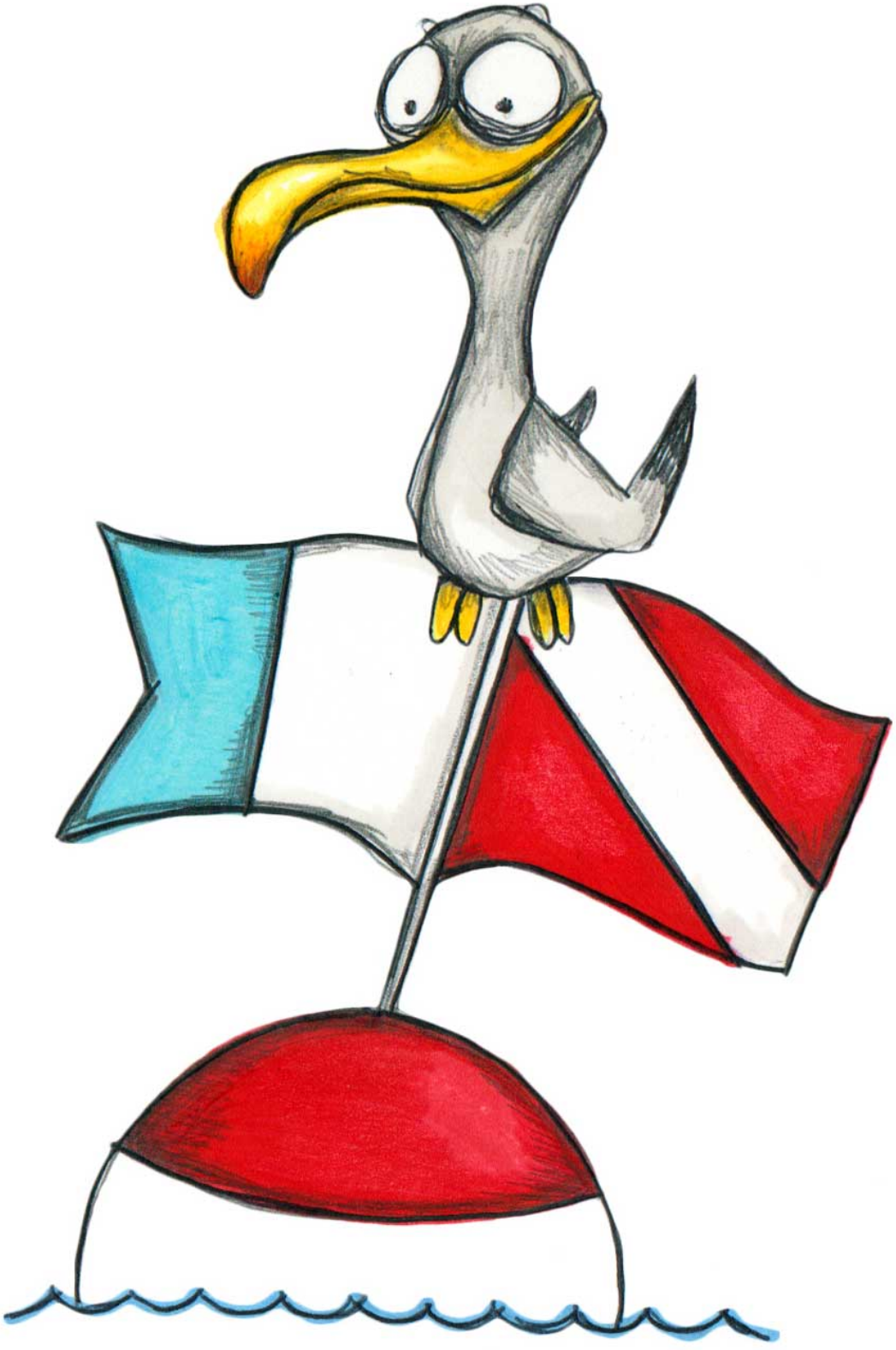
Beware of the flag

A diver down flag, or Alfa flag, is a warning and protection signal, used in the water to indicate that there is a diver below, so that vessels (ships, boats, surf boards etc.) know to keep at a safe distance and slow down. The flag can be blue and white, vertically split in the middle (Alfa), or red with a white diagonal stripe.

It is important for whoever is operating a vessel to recognize the diver down flag, in order to avoid accidents. Boats should keep a distance of at least **100m** from the flag, that can either be attached to a buoy or hoisted on a boat, and should be clearly visible from all directions.

Divers also have to do their part to avoid accidents, keeping as close as possible to the flag (within a 50 meter range) and as far away as possible from any vessel. Even if underwater sounds are “muffled,” motor vessels are loud and can be heard from a distance, while there are other vessels, like sailing boats, that

are extremely quiet.



Young divers: are you ready to go underwater?

The most important thing is that you have a desire to dive! It will be your instructor's duty to evaluate your fitness to dive; a decision that will be taken in agreement with your parents, and based on how well you show that you're comfortable in the water.

Remember:

– On the surface, protect yourself from the sun with sun screen, sunglasses, and visors; stay in the shade during the hottest part of the day; drink lots of water and keep hydrated!

– In the water, always dive within the limits of your certification, and always with an instructor or a certified parent. When you scuba dive, never hold your breath!

In closing, let's consider every dive like a gift, an educational experience, and an opportunity. Let's use all setbacks as occasions to analyze possible answers, possibilities, and strategies for prevention with our buddy.

Have fun!

Bibliography

DAN the Safety Man, Beach Safety Tips. DAN Staff (www.diversalertnetwork.org/files/dsm.pdf)

Children and Diving – What are the real concerns? Matías Nochetto, M.D. (Alert Diver — Q4 Fall 2015)

Linee guida per la sicurezza dei bambini – DAN Staff (www.alertdiver.eu)

Rendere la subacquea sicura e divertente per i bambini – DAN Staff

Sicurezza in immersione: non è per caso – Dan Orr

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