# Confédération Mondiale des Activités Subaquatiques World Underwater Federation



# CHILDREN'S DIVING STANDARDS

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#### 1. RULES

#### 1.1. The situation

Children's diving is not integrated into the adults' programme. Its development and contents stand alone.

Minimum and maximum ages are at the discretion of the federation.

CMAS suggest that the age limits should be between 8 and 14 years. Children over 14 should join the federal programme for adults.

In some Federations, with special dispensation, it is possible for a child to qualify as a CMAS 1\* Diver at 12 years of age.

# 1.2 The objectives of the syllabus

To provide diving for a child without his/her parents.

To provide a child with a leisure experience which can be enjoyed in a totally different environment.

The objectives help the child to:

- learn to control his/her body in a different environment by :
  - \* adjusting balance and stability to conditions of near weightlessness,
  - \* using the feet as propulsion engines,
  - \* breathing from an artificial air source,
- adapt to a 4 dimensional environment, that is
  - \* length
  - \* width
  - \* depth
  - \* time
- understand the new set of rules imposed by being underwater (a different environment with new dangers: to be concerned for others and trust in them)

# 1.3. Prerequisites

- The minimum and maximum ages are defined by each federation according to their own rules.
- CMAS suggest that, for medical reasons, the minimum age for diving is set at 8 years.
- The maximum age for the children's programme is set at 14 years, at which point they can join the adults programme for CMAS
- The medical certificate must be completed by a doctor who is experienced with the problems associated with children's diving. Renewal of the medical certificate is defined by each federation.
- For CMAS, the examination must be repeated every 6 months (unless the examining doctor deems otherwise) between the ages of 8 and 12 and every year between the ages of 12 and 14.
- The first examination must include an examination of the eardrum.
- The child must be able to swim, without equipment, a minimum distance of 25m.

### 1.4. Training personnel

#### 1.4.1. Ratio instructor/pupils

- First dive:
  - \* 1 instructor for every pupil
- In a natural environment or in a swimming pool if the depht of the dive is more than 5 metres:
  - \* 1 instructor for every pupil
  - \* 1 instructor for every 2 pupils, if they hold the "group" qualification.
- In an artificial environment:
  - \* 1 instructor can supervise a maximum of 3 pupils

### 1.4.2. Required experience - instructors

- The instructor must have held a medical certificate for at least 1 year.
- The level of competence for instructors is at the discretion of each federation.
- CMAS suggest that the minimum endorsements for Instructors are as follows:
- 1 star CMAS instructor for a depth of less than 5 metres
- 2 stars CMAS instructor for a depth of more than 5 metres.
- The instructor must have taken part in at least 1 meeting or seminar on children's training.

### 1.5. Safety standards

#### 1.5.1. Diving standards

• The diving limits depend on the divers age and endorsements.

AGE	FIRST DIVE	ENDORSEMENT BRONZE/SILVER	ENDORSMENT GOLD
8-9 years	depth of 2 metres	depth of 5 metres	
9-10 years	depth of 2 metres	depth of 5 metres	
10-12 years	depth of 3 metres	depth of 5 metres	depth of 5 metres
12-14 years	depth of 3 metres	depth of 5 metres	depth of 10 metres, if holding the "Group" endorsement

- The number of dives is limited to 1 dive in a 24 hours period. Night diving is not advised.
- Water temperatures are defined by each federation depending on the local constraints.
- CMAS suggest that diving in water with a temperature
  - \* less than 12°C is forbidden for children.
  - \* In water with a temperature of 12°C, the maximum length of a dive is limited to 10 minutes,
  - \* above this temperature it can be extended to 25 minutes.

# 1.5.2. The diving children's equipment

- The equipment must be adapted for children, and in perfect working order.
  - \* The fins must be light weight, and the mask must be suitable for a child's face.
  - \* The regulator must be supple and light, and the mouthpiece adapted for a child
  - \* The wet suit must be cut for children, and must include, depending on the temperature of the water:
  - full length trousers or not
  - booties are obligatory
  - \* The weight / ballast must be of minimum, with no sharp edges.
  - \* The back packs must be adapted to a child's physique.
  - \* A stab jacket may be used at the discretion of the instructor.

#### 1.5.3. The diving instructor's equipment

- The instructor must know at all times the depth of the dive and the period for which he has been submerged.
- The instructor's equipment must have 2 regulators of which one must have a mouthpiece suitable for a child.

#### 1.5.4. Surface safety

- Surveillance before and after the dive must be carried by an instructor holding the required endorsements.
- The supervisor's duties also include:
  - $* \quad \text{the organisation of the workshop, defined by the management (biology, coastal discovery...)} \\$
  - \* organisation of possible medical aid
  - \* logging in the log book all the parameters of the dive
  - \* noting questions, unusual incidents.
- The level required for instructor to forfill this role is 2 stars instructor CMAS.
- Safety equipment must include :
  - \* Oxygen mask, adapted for children
  - \* First Aid kit
  - \* VHF
  - \* High energy food

# 1.5.5. Specific structure

- The boat must be adapted so as:
  - \* to avoid mixing adults and children
  - \* to have a suitable means of children entering the water.
  - \* to have tank storage racks
  - st and the travel period in the boat should be kept to a minimum.
- The group leader must:
  - \* gain the interest of the children and maintain control over them
  - \* manage the allocation of space
  - \* manage games and swimming
- Showers and changing rooms are to be separate from the adults (either in time or space) and single sex.

# 1.5.6. Diving sites

- The area for the dive must be appropriate for the diving experience of the child. There must be a suitable method of entry to and exit from the water.
- The area of the dive must be populated with the species necessary to forfill the objectives of the dive. (The dive must therefore be prepared.)

# 1.6. Objectives of the end of syllabus

- The certificates are attained in the following order:
  - \* Diver bronze, silver and then gold.
- These can be attained in a natural or an artificial environment.
- Further endorsements can be obtained:
  - \* from the level of diver bronze, the "group" endorsement
  - \* from the level of diver silver, the Boat 1, Boat 2 and "Jacket"
- These endorsements must be obtained in the sea.
- The award of these certificates and endorsements is in no way a result of an examination, but the result of continuous assessment while on course or after a year of diving in an artificial environment.

### 1.7. Minimum period

- The minimum training period remains at the discretion of the instructor.
- The attainment of the different certificates can take place during a one week course in a natural environment or after one year in a club in a natural or artificial environment.
- All knowledge acquired in an artificial environment needs to be adapted to the natural environment by a suitable familiarisation session or sessions.

#### 1.8. Evaluation

- Evaluation is carried out by the instructor.
- The adaptation into a natural environment is to be managed by an instructor who is experienced in problems associated with children's diving.

# 2. MINIMUM PROGRAM

#### 2.1. Recommendations

#### 2.1.1. The need for teaching adapted

For the child to learn he/she must:

- · feel respected as an individual
- respect the learning pace
- · feel safe
- be motivated
- understand that the activities proposed have a purpose
- be active (the aim of the project)
- be aware that the locations proposed are adapted to the capabilities of children
- be aware that the locations are varied and the dives are of a sufficient length
- be capable of self-evaluation

#### 2.1.2.. Organisation

The training can take place either during a one week course in the sea or after one year in a club.

All knowledge acquired in the artificial environment must be completed by an adaption period into the natural environment under the supervision of an instructor.

# 2.1.3. Syllabus

#### a) Theory

- The diving theory that is taught should relate to the practical sessions. It must be in connexion with diving sites.
- The syllabus for the bronze and silver certificates includes the requirement for a knowledge of fauna and flora.
- For the gold certificate a knowledge of elementary physiology is required, allowing the child to become aware of his physical safety.

# b) Practical

- · A diver who has attained the bronze award must feel at ease both with the diving environment and his equipment.
- He can then obtain or not the "group" endorsement. The training must take place in a natural environment.
- A diver who has attained the silver award must be able to interact with the environment.
- He can then work towards gaining the boat endorsement 1 and 2 and then the endorsement "jacket". The training must take place in a natural environment.
- The diver of the gold level must work towards improving his diving technique.

# c) Teaching support for the pupils

- Teaching for the children will be in the form of:
  - \* video, films
  - \* slides, transparents
- These sessions will be presented in a relaxed atmosphere.)

# d) Teaching support for the instructors

- National federation texts
- National federation rules and regulations
- · Meetings and seminaires
- Reading

# 2.2. Minimum syllabus contents

#### 2.2.1. Theoretical lessons

#### a) BRONZE award

- The student must be able to use his equipment
- He must be able to identify all he saw:
  - \* animal or vegetable
  - \* what swims and what doesn't
  - \* several fish and algae
  - \* dangerous plants and animals
- He must be able to discuss the dives:
  - \* place (sea, lake....)
  - \* temperature
- · He knows the basic signals. He must understand and know when to use the following signals

\* Everything's O.K., I understood

I'm in difficulty

\* I'm short of air

I'm cold You, me

\* Look\* I've opened my reserve

Open my reserve

\* We go up

We go down

#### b) SILVER award

- He knows how to describe his dive:
  - \* in respect to his/her progression
  - \* in respect to areas of interest
- He is able to identify several subaquatic animals and several algae.
- He knows how to use in the water descriptive plates of flora and fauna.
- He knows these supplementary signs:

\* Everything is O.K. on the surface

It is not normal on the surface

\* I'm out of breath

Move closer to me

- \* Stop
- He understands and knows when to use these signs.

#### c) GOLD award

- He understands the security orders given in the group
- He understands the idea of buoyancy and its use in diving
- He knows how to prevent a barotrauma:
  - \* collapse of the lungs
  - \* collapse of the mask
  - \* barotrauma of the ears
- He understands the habitat and the behaviour of the animals in close quarters.

#### d) Endorsements

#### Group

• He understands the security orders given in a group.

# Boat 1 and 2

- He knows several sea knots.
- He behave correctly towards boat security.

# <u>Jacket</u>

• He knows his equipment.

#### 2.2.2. Practical experience

#### a) BRONZE award

#### Length

- This endorsement can be gained either during a 1 week course in the sea or by joining a club in either a natural or artificial environment for 1 year.
- The award is at the discretion of the instructor.
- All knowledge acquired in the artificial environment need to be adaptated to the natural environment. This adaptation must be run by an instructor.

#### Location

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil must be able to dress and undress himself.
  - \* rig and dismantle the diving tank
  - \* know the correct order to put on equipment
- The pupil must be capable to balance his ears:
  - \* at the doctors (at the time of his medical visit)
  - \* with the instructor, at the water edge
  - know how to pinch his nose with the mark in place
  - \* know how to exhale via the nose, with the mask and mouthpiece in place
- \* know how to overcome the sensation of "pressure" of both ears
- The pupil must be able to take out and replace his mouthpiece:
  - \* open his mouth in the water
  - \* know how to hold his breath for a short period
  - \* stay calm
  - \* replace the mouthpiece on inhaling
  - replace the mouthpiece on exhaling using the demand valve.
- In the sea, the pupil must be able :
  - \* to empty his mask of water
  - \* to enter the water from the shore
  - \* to move in all directions (propulsion)
  - \* to maintain all the positions (lung ballast)
  - \* to stay in contact with his instructor and the environment in which they are diving.
- The pupil must be able to return to the surface, that is:
  - \* know how to swim vertically
  - \* know how to ascend, breathing normally with a regulator
  - \* know how to ascend, exhaling air
  - \* know how to ascend at the same time (same speed) as his instructor
  - \* know how to stay at the surface
  - \* know how to rejoin the boat.

#### Safety standards

- Depth of 5 metres maximum
- Advised method of entry into the water is from the beach at the beginning of training.

#### Further training

- The pupil can achieve the "Group" endorsement.
- The pupil can start training towards the silver award.
- Endorsements must be take in a natural environment.

#### b) SILVER award

#### Length

- This endorsement can be gained either during a 1 week course in the sea or by joining a club in either a natural or artificial environment for 1 year.
- The award rests at the discretion of the instructor.
- All knowledge acquired in the artificial environment need an adaptation period into the natural environment.
   This adaptation will be run by the instructor.

#### Location

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil must be competent in the sea, that is:
  - \* recognise different diving sites (mass of fallen rocks, overhangs, herbuim, and rocks)
  - \* recognise the direction of the sun and light
  - \* knows if he descends, if he ascends, or if he stable at the depth
  - \* can position himself in relation to the surface (near, far, see the boat, water ripples or waves)
  - \* can position himself in relationship to the other divers
- The pupil must be able to replace his mask under the water:
  - \* be able to take off his mask
  - \* be able to breath without a mask
  - \* exhale via the nose without a mask
  - \* open the eyes without a mask
  - \* be able to replace the mask correctly and clear it of water
- The pupil must be able to rejoin the surface in all unusual or exceptional circumstances:
  - \* know how to ask for air
  - \* be able to regain the surface using the breathing apparatus of the instructor
  - \* recognise the distance to the surface
  - \* know how to and why to check the surface before surfacing
  - \* be able to swim towards the surface without a mask
- The pupil must be able to return to the starting point :
  - \* know how to swim on the surface for a short distance, fully equiped with the regulator in the mouth
  - \* know how to keep a straight line while swimming equiped with the regulator
  - \* know how to direct himself towards the boat.

#### Safety standards

- Depth of 5 metres maximum
- Water entry adapted for the pupils standard.

#### Further training

- The pupil can achieve the group endorsement.
- The pupil can acquire to the Boat 1 and 2 endorsements.
- The pupil can acquire Jacket endorsement.
- endorsement must be take in a natural environment.
- The pupil can work towards the Gold Award

#### c) GOLD award

#### Length

- This endorsement can be gained either during a 1 week course in the sea or by joining a club in either a natural or artificial environment for 1 year.
- The award rests at the discretion of the instructor.
- All knowledge acquired in the artificial environment need an adaptation period into the natural environment. This adaptation will be run by the instructor.
- If an advanced diver has never been in a natural environment, he will probably need a specific adaptation before taking the endorsement. The instructor will handle special cases and will obviously be aware of problems inherent to diving with children.

#### Location

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil is familiar with the equipment:
  - \* checks equipment before diving
  - \* rinses the equipment (PMT, wet suit, regulator) with fresh water after the dive
  - \* disinfects the regulator if it's not his own
  - \* protects the regulator from being accidentally damaged
  - \* dries his equipment in the shade
  - \* respects the equipment of fellow divers
- The pupil understands group security
  - \* on the boat :
    - stays with his group and his instructor
    - be attentive to dangerous elements on the boat
    - ♦ knows flags used for diving
    - doesn't run (he can slip when the desk is wet)
    - doesn't leave equipment lying around, secures his/her tank
  - \* on water surface
    - \$\display\$ gets in the water after the instructor and when the instructor tells him to
    - ♦ doesn't stay under the ladder
    - ♦ stays with his group on the water's surface
    - ♦ goes underwater when the instructor tells him to
  - \* when diving
    - ♦ be attentive to the instructor's signals
    - ♦ stays at his level for descent at the bottom of ocean floor

for ascent

- ♦ informs the instructor of other divers' signals
- ♦ informs the instructor of his partner's behavior, if abnormal
- \* after the dive
  - ♦ doesn't stay under the ladder
  - ♦ comes back up to the surface when the ladder is free
- The pupil progresses in his knowledge of diving technicalities :
  - \* perfects his/her underwater immersion skills (duck dive, jack knife dive)
  - descends (to diving area)
  - \* alternates breathing between regulator mouthpiece and snorkel
  - \* swims on water surface in full diving gear, using the snorkel
  - \* perfects finning
- The pupil understands the following theoretical concepts:
  - \* knows how and why he floats
  - \* knows why a boat floats
  - \* is familiar with volume variation (lung ballast)
  - \* can cite a few simple examples

modelling clay floats when it is flat

modelling clay sinks when it is rolled up in a ball

- \* understand Archimede's law
- \* knows why he clears his ears

to avoid being hurt and prevent a barotrauma

only clear during descent

\* is familiar with a few anatomic concepts, such as

outer ear canal

eardrum

the cavity behind the eardrum

the relationship between the Eustachian tube and the throat recognises all these elements on a simple illustration of the ear

- \* knows the relationship between pressure and volume for ascent and descent
- \* knows why he blows when he comes to the surface

the air he breathes at the bottom expands on the way to the surface (balloon principle)

knows that his lungs do not really expand

blows out to avoid putting too much pressure on his lungs

- The pupil knows his diving environment, the habitat and the behaviour of animals living in the nearby environment
  - \* knows the fauna and flora of the diving site
  - \* recognises and describes the animals encountered
  - recognises and describes the flora he sees

#### Safety standards

- Depth of 5 metres maximum
- Water entry adapted for the pupils standard.

#### Further training

- The pupil can take the Group endorsement.
- The pupil can take the Boat 1 and 2 endorsements.
- The pupil can take Jacket endorsement.
- Endorsement must be take in a natural environment.

#### 3. THE ENDORSEMENTS

These endorsements are awarded as a result of the careful evaluation of both the students in water competence and theoretical knowledge together with their physical and emotional maturity.

They are distinct from children's diving certificate, but can be given at the same time.

The pupil can take the "Group" endorsement with the Bronze award.

The pupil can take the Boat 1 & 2 and Jacket endorsements with the Silver award.

If a Gold award holder has never been in a natural environment, he will need a specific period of adaptation before taking the

The instructor will handle special cases and will obviously be aware of problems inherent to diving with children.

The endorsement must be take in a natural environment.

# 3.1. Group Endorsement

- The pupil can take the Group endorsement with the Bronze award.
- The endorsement is evaluated by the instructor.

#### Location

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil must know group security measures :
  - \* knows to follow the group instructor
- on the surface
  - \* goes in the water after the instructor
  - \* doesn't stay under the ladder
  - \* stays with his group at water surface
  - \* ascends when the instructor gives the sign
- · when he dives
  - \* stays with his instructor and the group
  - \* stays with his Buddy
  - \* be attentive to the other divers' signs
  - \* tells the instructor if his partner's behaviour is abnormal
  - \* if he's alone, ascends to the surface at a controlled speed and waits at water surface
- on the way back to the boat
  - \* waits until the ladder is free
  - \* The pupil follows the group
  - \* doesn't dawdle
  - \* stays with the rest of the group
  - \* stays with the group level for descent at the ocean bottom

for ascent

\* ascends when the instructor tells him to

#### Safety standards

- Depth of 5 metres maximum
- Water entry adapted for the pupils standard.

#### Further training

- The pupil can take the Boat 1 and 2 endorsements.
- The pupil can take Jacket endorsement.
- The pupil can take both Boat 1 and 2 and Jacket endorsements with the Bronze award.

# 3.2. Boat 1 Qualification (inflatable boat or barges)

- The pupil can take the Boat 1 endorsement with the Silver award.
- Endorsement is evaluated by the instructor.

#### **Location**

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil must be able to carry out a backward entry:
  - \* is comfortable in the back position
  - \* sits on boat side with his back to the water
  - \* isn't afraid of entering the water backwards
  - \* is familiar with the backward entry position

checks that the area to enter the water is free

edges his buttocks over the side of the boat, to help entry

rests his chin on his chest, and "tucks" his head

holds his mask, his regulator and mouthpiece

frees his palms before tipping over

falls backwards with body limbs grouped together

okays once he has is settled on the surface

clears the area

- The pupil descends along the anchorline
  - \* descends vertically feet first

stays in front of the instructor for descent

\* descends head first

stays beside the instructor to descend

- \* clears his ears along the way down
- \* guides himself using the anchorline
- The pupil detaches the tank at the surface and passes the aqualung underwater:
  - \* fins to maintain a stable position
  - \* waits for his turn before detaching the tank
  - \* knows the sequence to detach his tank:

unfastens the belt's jockstrap

unfastens the strap opposite the regulator tube

unfastens the second strap

fastens the jock strap buckle back to the belt strap

\* knows the sequence to detach the tank if a jacket is attached to his tank :

inflates the jacket correctly

undoes the sleeve opposite the regulator hose

undoes the other sleeve

hands over his aqualung to the boat

hands over his snorkel

\* climbs into the boat

#### Safety standards

- Depth of 5 metres maximum
- Water entry adapted for the pupils standard.

#### Further training

- The pupil can take a Boat 2 endorsement.
- The pupil can take a Jacket endorsement.
- The pupil can take both Boat 2 and Jacket endorsements with a Silver award.

### 3.3. Boat 2 Qualification (trawler, launch)

- The pupil can take the Boat 2 endorsement with the Silver award.
- Endorsement is evaluated by the instructor.

#### **Location**

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil must know boat security rules and respect them:
  - \* sits still (doesn't run around)
  - \* knows these sea terms : bow, stern, anchorage
  - \* listens to the boat skipper
  - \* stays away from the motor and other equipment (dock, anchor)
  - \* doesn't lean overboard
- The pupil jumps straight into the water:
  - \* before jumping in, checks that the area is free
  - \* lets his fin blades hang over the boat edge
  - \* holds his mouthpiece, mask and tank
  - \* looks straight ahead before taking the step off the boat
  - \* comes to water surface right after having ok'd to his instructor
  - \* frees the area for other divers
  - \* stays close to his Buddy at the surface and waits for the instructor's signal to go underwater
- The pupil must know to descend
  - \* feet first
  - \* head first
  - \* doesn't forget to clear his ears
  - \* blows in his mask through his nose
  - \* follows his instructor
- The pupil decompresses at the anchoring line
  - \* stays in front of the instructor
  - \* is familiar with the lung-ballast
  - \* if he's wearing a jacket, can pressurise in the water
- The pupil climbs up the ladder fully equipped
  - \* keeps the mouthpiece in his mouth
  - \* waits until the ladder is free
  - \* places his feet carefully on ladder rungs
  - \* frees the area for other divers
  - \* takes his equipment off and puts it away
  - The pupil ties the following sailor knots :
    - \* mooring knots, bowline knots, clovehitch, sheetbend and hitches
    - \* square knot and its disadvantages
    - \* knot and the figure of eight knot

# Safety standards

- Water entry adapted for the pupils standard.
- Depth of 5 metres maximum.

# Further training

- The pupil can take a Boat 1 endorsement.
- The pupil can take a Jacket endorsement.
- The pupil can take both Boat 1 and Jacket endorsements with a Silver award.

#### 3.4. Jacket Endorsement

• The pupil can take the Jacket endorsement with the Silver award. Endorsement is evaluated by the instructor.

#### Location

• The dive site should have good visibility, be sheltered, with adequate means of entry to and exit from the water. It must also have the flora and fauna for the planned activity.

#### **Objectives**

- The pupil checks, fixes and ensures jacket safety:
  - \* checks his jacket before every dive : plugs are closed, belts, quick purge
  - \* fixes his jacket on his tank
  - \* hooks his direct system and sees how it operates
  - \* rinses his jacket in fresh water after the dive and dries it in the shade
- The pupil can stabilise:
  - \* inflates the jacket at surface and then deflates
  - \* with or without fins
  - \* using a lung-ballast
- The pupil must be able to control ascent:
  - \* exhales when he starts ascent
  - \* ascends slowly from diving area
  - \* minimises movement by using the jacket
  - \* stops his ascent before resurfacing
  - \* is familiar with the adverse result of holding his breath

#### Safety standards

- Depth of 5 metres maximum
- Water entry adapted for the pupils standard.

#### Further training

- The pupil can take a Boat 1 or Boat 2 endorsements.
- The pupil can take a Boat 1 or Boat 2 endorsements with a Silver award.

Summary of Programmes and Endorsements			
Certificate	Qualifications (required)	Further Training	
Bronze award (minimum 8 years old)	Group endorsement	diving area 5 metre zone	
Silver award (minimum 8 years old)	Group endorsement Boat 1 endorsement Boat 2 endorsement Jacket endorsement	diving area 5 metre zone	
<b>Gold award</b> (minimum 10 years old)	Group endorsement Boat 1 endorsement Boat 2 endorsement Jacket endorsement	diving area 10 metre zone for the 12/14 years old nearing end of training	

#### **Reminder:**

- Endorsements are not linked to children's diving certificates, but they can be given at the same time.
- If a diver has never been in a natural environment, he will need a specific period of adaptation to natural water before taking the endorsement.
- The instructor will determine the length of the adaptation period. He will handle special cases and will obviously be aware of problems inherent to diving with children.

# **APPENDIX 1**

DEVELOPMENT CHARACTERISTICS			
	MORPHO AND GROWTH	FUNCTIONAL ASPECTS	PSYCHO MOTORS ASPECTS
AVERAGE CHILD 4 YEARS TO 8 YEARS	<ul> <li>Slowing of growth and a prominent gaining of weight</li> <li>Gain in height</li> <li>Rounded torso</li> <li>Prominent abdomen</li> <li>Weak, short limbs</li> <li>Reduction of fatty tissue</li> <li>Harmonisation of the body</li> <li>Harmonisation of weight and body size, and the relationship between the 2 of them</li> <li>Development of the teeth ends</li> <li>Lumbar lordosis</li> <li>Development of the rib cage</li> </ul>	Thorax flat: limited work for heart and lungs Fast heart beat, and heart is still small Unstable vasomotor regulation with important variations in the heart beat, flexible blood vessels Joints are supple Muscles are not yet developed, and muscle tone is weak Lung capacity is small in comparison to the body size Mechanical qualities of the lung Development of interstitial lung tissues and development of inspiration and expiration muscles Maturation of lymphoid glands in the ORL regions with emphasis on the development of the tonsils and adenoids(Waldeyer annual)	<ul> <li>rapid command of motors after a period of trail and error</li> <li>control of natural movements</li> <li>awakening of need for activity and movement (the fidgets)</li> <li>imitation of adults</li> </ul>
		<u>Cold</u>	
		thermoregulation is limited with a slim risk of hypothermia and hyperthermia	

# **APPENDIX 2**

DEVELOPMENT CHARACTERISTICS		
MORPHO AND GROWTH	FUNCTIONAL ASPECTS	PSYCHO MOTORS ASPECTS
8-10 years of age	8-10 years of age	8-10 years of age
<ul> <li>Rapid period of staturale growth</li> <li>Peak of puberty</li> <li>Leg growth</li> <li>Loss of fatty tissue</li> </ul>	<ul> <li>Growth of the heart and ability to work harder</li> <li>Possibility of slow development of the heart/size with erethism and heart murmur</li> <li>Continuing neurovegetative, cardiac and vascular instability</li> <li>Morphological development of ability, volume, and lung debits</li> <li>maturation into adulthood with the regression of the lymphoid glands in the ORL regions</li> </ul>	<ul> <li>co-ordination and balance improves</li> <li>co-ordination of he hands and feet improves</li> <li>increase in use of gestures</li> <li>Possible acquisition of numerous automatisms</li> <li>Improvement in control of mobility and body</li> <li>Precise corporal</li> <li>Attention span improves</li> <li>Ease of gestures</li> </ul>
10-12 years of age	10-12 years of age	10-12 years of age
<ul> <li>Slow down of puberty</li> <li>Development of secondary sexual characteristics</li> <li>Relative growth of lower body</li> </ul>	<ul> <li>Stabilisation of the neurovegetatives of the heart and the blood vessels</li> <li>Increase in volume and size of the heart with making up for lost time (disappearance of heart murmur)</li> <li>Increase in volume of thoracic cage with an increase in volume and capacity to breath</li> <li>Development of aerobic metabolism with maturing of the lactic metabolism and endurance training.</li> <li>MUSCULAR DEVELOPMENT</li> <li>Maturing of muscular structures (fibres I/II)</li> <li>Development of physical strength and the harmonisation of agonistic and antagonistic muscles</li> <li>Particular development of inspiratory and expiratory muscles</li> <li>O.R.L. attention</li> </ul>	<ul> <li>Destruction of the schema corporal according morphology and puberty</li> <li>Different rates of development between girls and boys</li> <li>The importance of re learning of gestures and co-ordination and the creation of a new body image</li> </ul>

# **APPENDIX 3**

PROGRESSION THROUGH CHILDHOOD			
PSYCOLOGICAL ASPECTS	SOCIOLOGICAL ASPECTS	NEEDS	
Will for power     Identification with the parents     Opposition phase     * Turbulent     * Short attention span     * age of story telling     * age of marvelling     * inability to analyse	<ul> <li>Competition with parents</li> <li>Detachment shaded by the adult world</li> <li>Association with young people of the same age</li> <li>Play activity that is both solitary and social</li> <li>No difference between boys and girls.</li> </ul>	<ul> <li>INDICATIONS</li> <li>healthy environment</li> <li>(calm, rest, food)</li> <li>environment for learning</li> <li>Initiative of gesture (garden, playground, game plain).</li> <li>sun, open air</li> <li>opportunity to follow practical learning</li> <li>Rhythm education</li> <li>balance, skill, orientation, observation</li> <li>learning about breathing</li> <li>PRECAUTIONS</li> <li>Avoid stimulants</li> <li>No prolonged muscle work, do not work on strength</li> <li>Open the span of activities</li> <li>No period of prolonged stillness</li> </ul>	
8 - 10 years of age	8 - 10 years of age	8 - 10 years of age	
<ul> <li>Regression of intellectual syncretism</li> <li>Attempts at critical expression, possibility of analysis</li> <li>Interests become objectives         <ul> <li>revival of interest in schoolwork and activities</li> <li>need for justice and initiative</li> <li>respect for rules of the game</li> <li>rights and obligations</li> </ul> </li> </ul>	games  • Demand for autonomy ( freedom to	INDICATIONS  It is a graceful age, but with little physical strength  • Varied activities in a various natural environment  • Fun activities (skill, speed and suppleness)	
10 - 12 years of age	10 - 12 years of age	10 - 12 years of age	
<ul> <li>Conflicts founded by puberty.</li> <li>Period of opposition with the possibility of a conflict with authority</li> <li>Desire to be an individual</li> <li>Life in a small group</li> </ul>	<ul> <li>Segregation between boys and girls</li> <li>Ambiguity between small groups of friends and game groups.</li> </ul>	<ul> <li>Relearning of corporal scheme</li> <li>Search for a role model</li> </ul>	