



# CANOE SLALOM

## WHAT IT TAKES TO PROGRESS

# Foreword

Our sport of Canoe Slalom is unique and special. It is highly technical with many different skills and abilities needed to be successful, understanding how we develop these in young paddlers is really important. The What It Takes To Progress (WITTP) framework harnesses the collective knowledge and understanding of junior paddler progression into a guide to help the development of athletes and their coaches.

By focussing training and practice on key areas of importance at each level, it can hopefully support paddlers to excel at every stage of the pathway and help them to realise their goals. This document should be treated as recommended principle guidance for the coach, requiring specific tailoring to the development needs and environment for the individual athlete.

Mark Ratcliffe

Canoe & Extreme Slalom Performance Director

# What It Takes, an Introduction

**What It Takes To Progress (WITTP)**- Is the foundation to WITTW and is the **development** framework for young and developing athletes aged 10-18. The WITTP framework identifies the key foundations that underpin potential, across genders and classes detailing technical competencies, racing experience, physical measures, psychological characteristics and behaviours.

WITTP is focused on the principles of development and training environment design. Coaching at the base of the pathway involves working with broad groups of individuals that all have varied and developing needs and facility access. WITTP offers a reference point for decision making to help coaches create effective and appropriate learning environments suitable to the needs of their athletes and the constraints of the environment that they individually operate within.

**What It Takes To Win (WITTW)**- Is the **performance** framework for the World Class Programme, focused on the specific and unique development of the athlete, maximizing the specific package of strengths presented by the individual, leveraging these to the benefit of a competitive advantage on the world stage to ultimately win medals at the Olympic Games.



# What it takes....

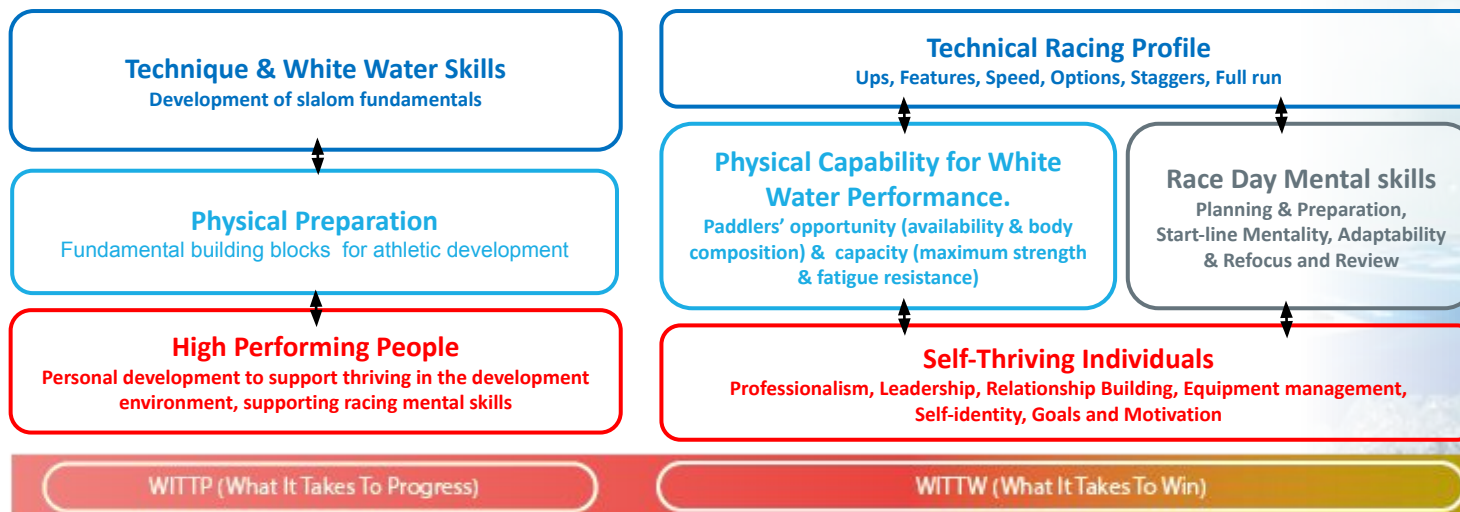
A canoe slalom performance is fast, dynamic and unique, pitting an athletes physical and technical abilities with optimum decision making and adaptability down a 300m white water course. The aim is to negotiate the gates as fast and as clean as possible, with the winning athlete being strong in all aspects and an expert in exploiting their own attributes to win.

There are a wide array of differences in approach and styles to negotiate a slalom course, albeit built on similar foundations of technical, mental and physical attributes.

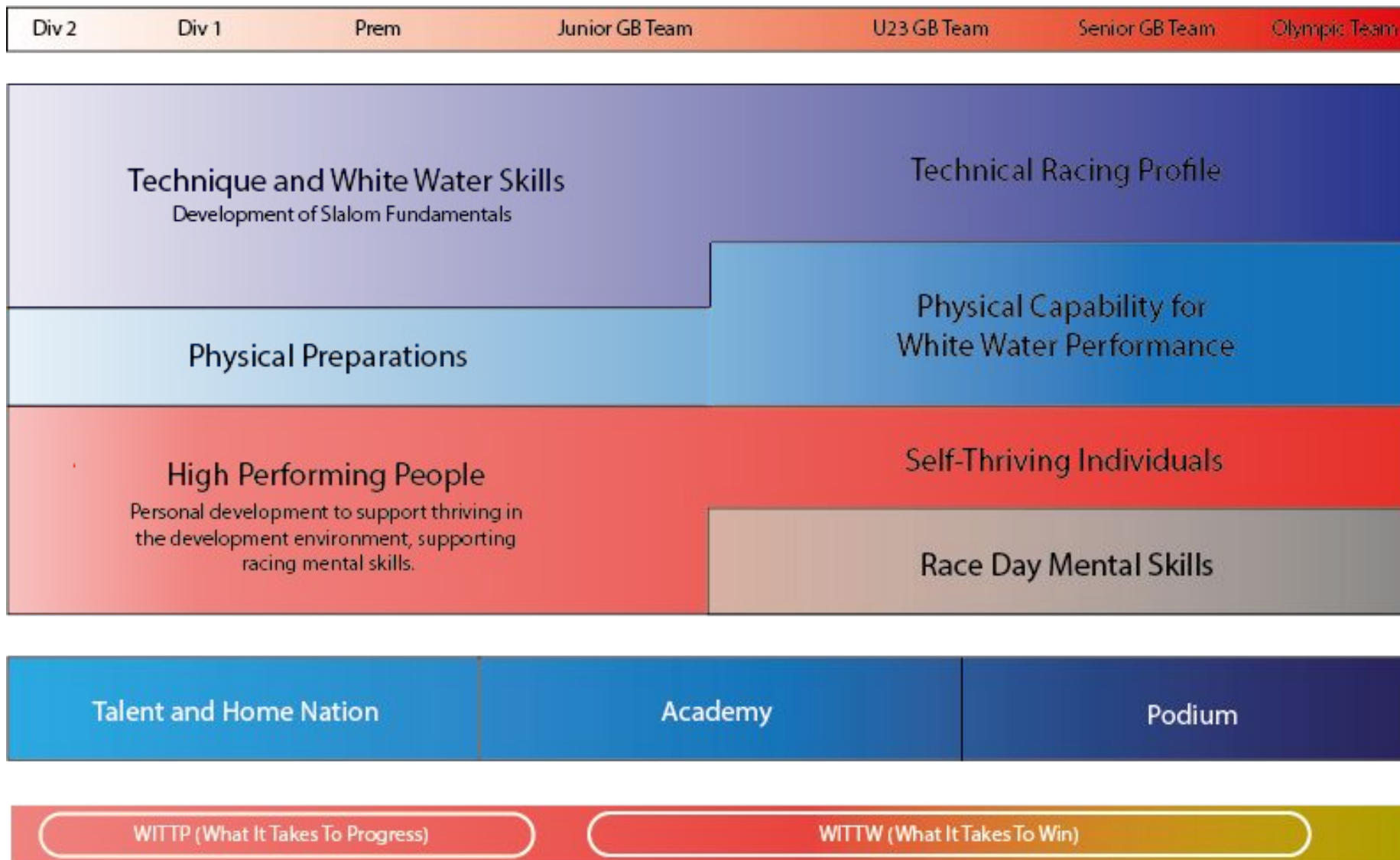
The WITTW model describes the **what** of an elite winning **performance** at senior level and breaks down into four interrelated components.

How the athlete delivers this performance, drawing upon their individual and unique package of individual and unique strengths and abilities is referred to as the **Paddlers Performance Philosophy**.

WITTP is the foundation for this process and provides guidance and support for decision making and prioritization. It is the **what** of the youth development **process** in Canoe Slalom, it is broken into 3 key components that underpin, progress and evolve to form the basis of the WITTW model



# What it takes...



Development in Canoe Slalom can be seen through a number of different perspectives and lenses.

This diagram attempts to capture the relative priorities, progressions and interdependencies of some of the key considerations and factors that influence, contribute and impact Canoe Slalom Development.

The majority of components have progressive, phased shifts which is reflective of the individual and unique nature of athlete development.

# Youth Development Principles

Helping to guide the development and implementation of the WITTP framework are a number of overarching talent development principles:

1. **Complex and non-linear.** Development is highly individual and each athlete is unique. Talent development is not a simple, standard straight line, progression can be ‘bumpy’ and challenging.
2. **Long term.** Expertise in any domain takes time to develop, programmes of support should prioritise falling in love with the sport and developing **Fundamental Skills** to prepare young people for performance in the future, de-emphasising solely winning as the definition of success in the early years.
3. **Early exposure.** Our sport competes in age groups internationally and, in the UK, we typically see successful athletes making their first championship debuts at early ages (first Junior World Championships as J17s and their first Senior Championship finals on average aged 22 for K1M/K1W/C1M and aged 18 for C1W)\*. As with other complex and dynamic sports, there is a huge amount to learn, experiences to acquire and repertoires to build which all require time. Athletes should be exposed to the sport at a young age (starting before the age of 10).
4. **Support network.** Development is a social process requiring investment, support and challenge from a broad range of individuals that will all, in some way, shape an athlete’s development. This could be their parents, their coach, their training group, the wider club or friends from around the country.
5. **Holistic.** Development requires a robust foundation and the development of appropriate mental, physical and sport specific skills. Participation in competitive sport, striving to achieve development goals, being challenged and learning to overcome setbacks involves the learning of skills that are supportive of a young person’s development within and beyond the sport of Canoe Slalom. The journey and the growth of the individual is an end in itself.

\*since 2009

# Fundamental Skills

At the beginning of a paddlers development it is important to be exposed to a **range of movement challenges through a variety of sports and activities** to help the development of fundamental movement abilities.

Fundamental movement abilities provide transferable learning and support the formation of correct movement patterns and basic athleticism, increasing the speed of learning, helping to avoid injury and even improve the speed of recovery.

**Early specialisation in a specific sport or activity can hinder skill development in the long term.** Early exposure to a range and balance of other activities (not just Canoeing) will help the young person react, move well and increase fitness, all attributes that will aid development.

During the early stages of a paddler's development in Canoeing it can be beneficial to be **exposed to both Canoe and Kayak disciplines** in order to develop a broad and robust range of fundamental sport skills, movement abilities and learning capabilities. Typically paddlers might specialise by the time they are 16, but there is no strict rule and this decision should be driven by the athlete themselves.

As the athlete develops it becomes increasingly important to ensure that training is sport specific but ideally interspersed with non sport specific training (going climbing, running, swimming, playing football etc) to ensure that their fundamental movement skills ability are kept broad.



# Technique and White Water Skills

This framework has been developed to highlight and identify the progressive steps and key skills necessary to achieve appropriate technical competency as a junior athlete and what these skills should look like. Given the nature of the sport, there will be variation between individuals. Slalom coaching is about the application of principles in various settings and environments and this will differ.

Some elements of the framework are also class specific and the overall emphasis across the framework will vary between classes. Individual progression and development will also vary due to a range of factors (access to white water, individual rates of learning and motivation, individual rates of physical maturity).

Skills should be developed in a sequenced and progressive manner so as to develop robust foundations that do not limit long term performance potential. Each skill is colour coded to help guide a sequenced approach to learning (Phase 1-3) with all skills grouped into four main key areas; Foundation Competencies, Gate-based Competencies, White Water Specific Skills and Feature Specific Competencies.

It is the role and skill of the coach to carefully create an appropriate development plan suitable to the athlete's individual needs.

The technical progression guide is available [here](#).

		Phase 1	Phase 2	Phase 3
Foundation competencies	Stroke	Forward Paddling		
		C1 J Stroke & Cross Bow		
	Control	Composure		
Strategy		Speed versus Control		
		C1 Switching		
Gate-based competencies	Ups	K1 Basic Up		
		C1 Cross Bow Up		
		K1 Sweep Up		
		Back of the Blade Up		
		Single Stroke Up		
		Punt Up		
	Staggers	Open Staggers		
		Tight Staggers		
		K1 Back off		
	Spins	Basic Spin		
		C1 Cross Bow Spin		
		K1 Sweep Spin		





# Technique and White Water Skills



Canoe slalom is set in a highly variable and sometimes unpredictable environment. Development in Canoe Slalom is, in part, dependent on regular, consistent and focused training on gates and white water. The athletes enjoyment of the challenge and the thrill of paddling on white water especially is a critical part of both their ongoing investment and their ultimate potential.

Again, the framework is colour coded to help prioritise development. Progression is a balance of challenging beyond current ability and safety guided by athlete confidence and competency. The coach should aim to deliver a safe and positive session given the relative challenge and intensity presented by the available water environment to the individual.

WW specific competencies	Prevention of over rotation
	Eddy entry awareness
	Eddy exit awareness
	Ferry gliding
	Paddling down stream effectively through waves
	Use of off side edge

Phase 1   Phase 2   Phase 3

Feature specific competencies	Understanding and use of waves	
	Understanding and use of stoppers	
	Use of Stopper	Running around the ends and across the back of a stopper
		Exiting effectively onto the back of a stopper
		Jumping over and across stoppers
Use of a stopper as a cushion to kill downstream momentum		

The technical progression guide is available [here](#).

# Physical Preparation

The objective of Physical Preparation is to Maximise Slalom Skills and Boat Speed. Physical ability for a Canoe Slalom athlete allows consistent yet adaptable delivery of athletes' individual technical skills. Physical capability creates a larger 'bandwidth' within which slalom skills can be delivered in a full run. The three aims below are the contributors and enablers for optimal white water success. Click [here](#) for our full physical preparation programming guidelines.

## Key Aims of Physical Preparation within the Pathway

### 1. Increase availability to train

- Reduce the risk of injury, which in turn will increase athletes' ability to tolerate training volume, intensity and external forces.

### 2. Increase strength

'the ability to produce, tolerate, and transmit force'.

- This enables athletes to progress slalom technical learning objectives and raise power output capability.

### 3. Fatigue Resistance

'the ability to maintain and repeat the required force or power output'.

- This facilitates the delivery of repeated speed efforts of slalom skills when under fatigue.

Supporting the above is a need to develop base aerobic fitness to prepare for higher intensity efforts, ensuring adequate flexibility to enable correct body positions in the boat and establishing good sleep and nutritional habits. These all support a foundation for consistent execution and recovery from training and competition.



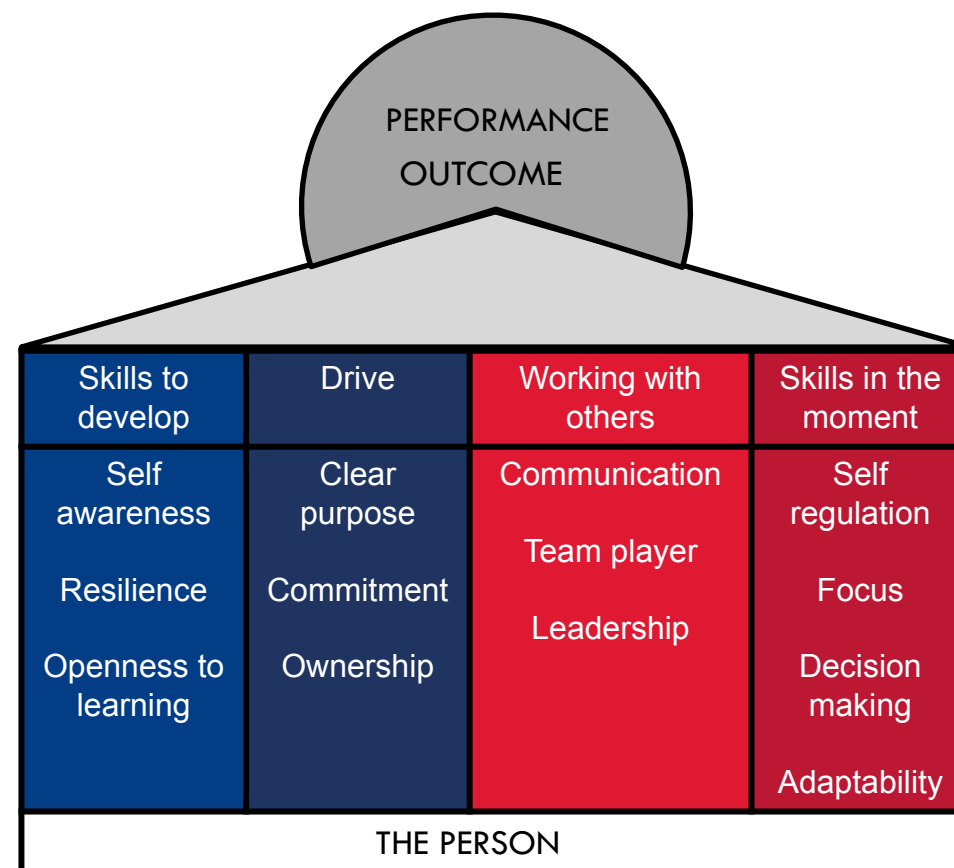
## High Performing People

The High Performing People concept is an awareness of the ‘whole-person’ in a sport context. It can be divided into two, the Person and the Performance Outcome. The Performance represents an athlete’s ability to deliver a performance under the pressure of competition. This Performance is underpinned by an athlete’s skills as a Person and these are presented by four pillars describing characteristics, behaviours and habits. No single element of the model is more important than the other and none are developed in isolation.

A whole person approach is beneficial for two reasons:

1. It will support the development of confident, resilient and high functioning people that are equipped to be successful and happy in life
2. People who are high performing are more likely to positively engage with their performance environment and are also more likely to do this with less personal stress.

See our **High Performing People guide** for more detail and information.



# Decision Making

The skill of decision making is a key fundamental of Canoe Slalom, requiring high levels of adaptability and refocus in the moment in order to deliver a performance. It is a crucial part of the High Performing People component and is an ability and that requires active learning and teaching. It is important to expose the athlete to a range of decision making themes.

Theme	Guided discovery	Problem solving	Performance context.
Athlete	Learning to make movement decisions whilst discovering new movement techniques. Exploring their interaction with the environment	Paddler determines own technical solution decision in order to achieve end goal of the movement / technique	Paddler makes own decisions based around technical and tactical solution (spin/forwards/backoff) options to achieve performance goal
Coach	Support paddler based decision making. Encourage lots of exploration, imagination and creativity. The only limit to the decision and discovery is to make it safe. Start to explore the decision making event, when decisions have been made and the thinking process behind those decisions that are made consciously	Encouraging the review of decisions vs outcome rather than whether the right decision was made. Review the reasoning behind the decision making as well as the purpose ('why was the turn made here? in this way? at this time?') Help the Paddler to learn the connection between decision and outcome, using the experience to plan and build a conscious knowledge base	Important that the Paddler owns the decision making process, using knowledge base, experience and imagination to develop the technical and tactical plan for the run. Decisions are made balancing the paddlers abilities to perform the fastest and optimal movements or solutions as well as taking calculated risks Review decisions vs the performance outcome
Examples	Lot of play, exploration, games, fun.	Tasks and challenges	Competitive based tasks and challenges



# Performance Outcome

Performing when it 'counts' is a challenging and thrilling part of canoe slalom. Being able to deliver under the pressure of performance is an essential component of becoming a Senior athlete.

At a development level, race day results alone do not paint a full picture of ability, but they do begin to reflect an athlete's potential to perform. Further up the pathway race day performance measures become critical, the process of learning to perform is a crucial step in any athlete's development.

At the base of the pathway the result on the day shouldn't be the sole focus. Instead it is the processes that are learnt, the skills that are applied and refined during the event that are the important focus.

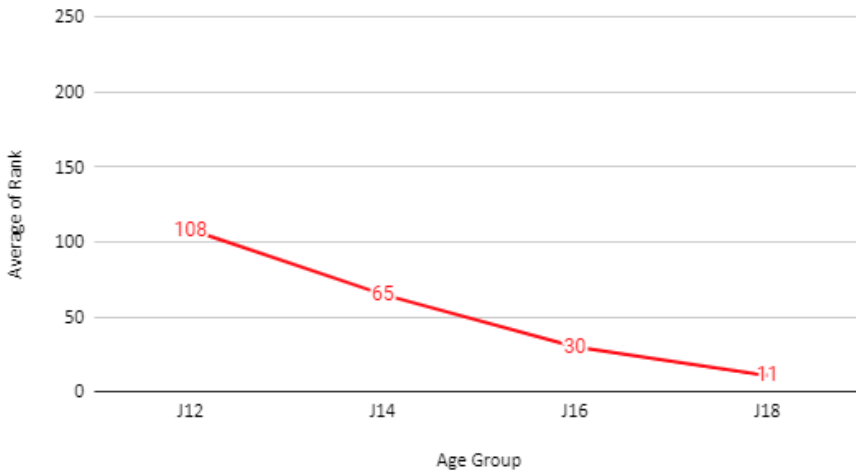
It is important that the athlete (and their family) enjoy their early experiences, make friends, maximising time on different types of water and learn to enjoy the challenge of racing.

The graphs that follow demonstrate the past performance and progression of athletes that have made the performance standard to be considered for the World Class Programme. Athlete development is non-linear, individuals progress at different rates and no two people will progress at the same amount, these graphs serve to demonstrate what has happened in the past.

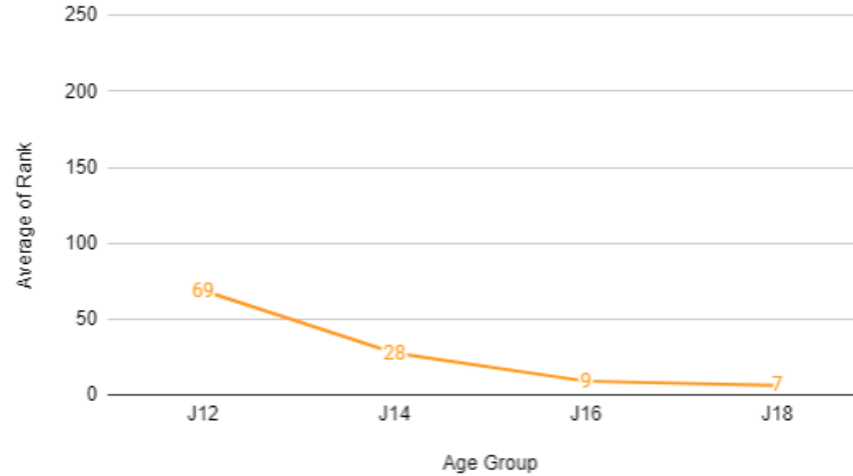


The graphs below demonstrate the average UK ranking by Junior age in each class for those paddlers that are currently Academy members of the World Class Programme. This is provided for information to demonstrate past average performance levels and rates of progression.

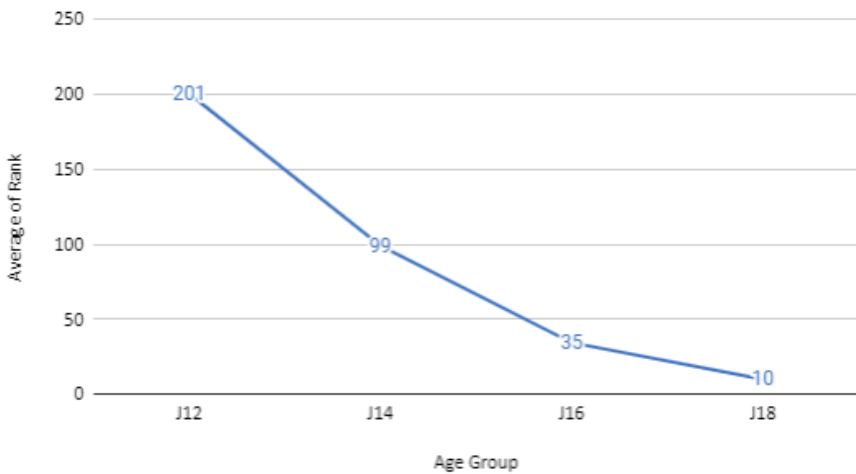
WCP Academy Athletes Junior Ranking by Age (C1M)



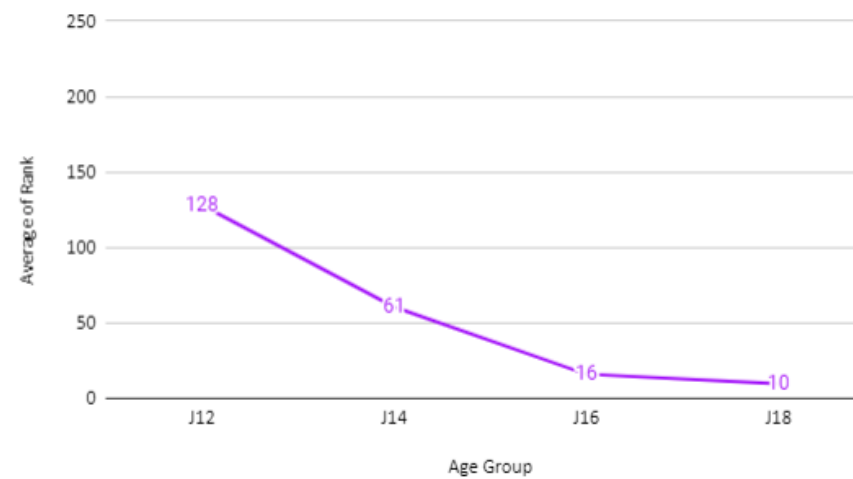
WCP Academy Athletes Junior Ranking by Age (C1W)



WCP Academy Athletes Junior Ranking by Age (K1M)



WCP Academy Athletes Junior Ranking by Age (K1W)



This data has been developed by taking the average result of the last placed qualifier for a final at Junior 18 and Under 23 World and European Championships over the period 2017-22 and comparing this to the winning K1M result. This creates a base performance level which is then used to extrapolate the relative performance percentage necessary across the age ranges (15-23) to meet this standard as an equivalence. This allows an account to be made for relative performance standards across different ages.

### Top 10 Age % Performance

	K1M	K1W	C1M	C1W
J14	115.78	138.61	129.60	160.97
J15	114.60	136.83	127.77	158.04
J16	113.41	135.06	125.94	155.17
J17	112.23	133.28	124.11	152.19
J18	111.04	131.50	122.28	149.26
U19	109.85	129.72	120.45	146.33
U20	108.67	127.94	118.62	143.40
U21	107.48	126.17	116.79	140.48
U22	106.30	124.39	114.96	137.55
U23	105.11	122.61	113.13	134.62



# Recommended Volumes

How many times the athlete is exposed to training/coaching and how this progressively loads in order to build capacity and increase tolerance is individually based and unique. Session duration and intensity should depend upon the athlete maintaining good technique and posture. Variety, fun and quality skill development are essential at the initial stages of the pathway. International exposure is an essential component of a developing athletes 'competitive diet'. As well as regular competition within the domestic system, travelling abroad to gain start line exposure to international peers or venue learning experience is a key part of progression. Ages are for guidance only.

	<14yrs	14-16yrs	15-18yrs
Sessions per week	6-9 (45-60 min duration, this includes other sports). Learning the fundamentals of the sport and how to train injury free.	8-12 (up to 60mins duration) Increasing volume and intensity.	9-12 (up to 90 mins duration).
Session Content	<ul style="list-style-type: none"> <li>• Building up to 3- 5 on water               <ul style="list-style-type: none"> <li>• 1-2 on land</li> </ul> </li> <li>• 2+ other sport sessions</li> </ul>	<ul style="list-style-type: none"> <li>• 5 - 7 on water (1-2 of which are boat based physical sessions)</li> <li>• 2-3 Gym/on land conditioning</li> <li>• 1 - 2 other sport session/s</li> </ul>	<ul style="list-style-type: none"> <li>• 5 – 8 White water sessions</li> <li>• 2 - 3 Boat Based Conditioning sessions               <ul style="list-style-type: none"> <li>• 3-4 Gym</li> </ul> </li> <li>• 0 - 3 Land based conditioning dependent on time of year               <ul style="list-style-type: none"> <li>• 1 other sport session</li> </ul> </li> </ul>
International Exposure	Attending international Training Camp; L'argentiere la Besse, Saint Pierre de boeuf, Augsburg, Roudnice, Solkan, Krakow. Building to competing in ECA Junior Cup races or similar; targeting sites specifically at those hosting Junior Championships in the future.		Competing at age range championships, ECA Junior Cups and open international events. Seeking exposure to future age related competition locations and training camps.
Notes	<p>Learning about the sport not specialising. Focus on fundamental basics of technique, building white water confidence and experiences of different site.</p> <p>Land based work should focus on learning correct techniques for movement patterns to transfer to lifting in the future. Introduction into boat based conditioning as long as they hold posture. Learning to race.</p>	<p>If athletes can't access white water 5 sessions a week then adding in additional flat water, gym or alternative activity should be considered. At this level location can influence gated white water vs. moving water sessions.</p> <p>Building strength on land to transfer into boat (dependent on previous training history and biological age). A more consistent and regular approach to boat based conditioning.</p>	<p>Winter period focusing on the advancement of technical and general physiological progression. In the summer a 'delivery focus' for selection race events. Physiological investment turns more towards paddling specific speed, and the maintenance of it over a sustained period.</p> <p>Gym based training moving towards loading and lifting to be able to produce more force in the boat.</p> <p>Other sports should be used to address any areas of development i.e. coordination, balance, flexibility.</p>



# Contributors and Supporters

We would like to thank all the coaches and support staff who have dedicated time and expertise to this piece of work.

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Alice Haining  
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Craig Morris  
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We would also like to recognise and acknowledge all the agencies and funding bodies that have contributed to the development of this work.



# Final Words

“To me, Canoe Slalom is about so much more than medals and titles, it's about the feeling of the skill itself and the journey of trying to improve oneself.

I would advise anyone with grand ambitions in the sport to put their time and effort into being the best that they can be, before comparing with others and most of all to enjoy it.”

**David Florence.**

Multiple World Champion and Olympic Medallist

