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K4
WATER & LAND DRILLS

A guide to building a strong technical foundation & cohesive crews

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Introduction

Welcome to the *K4 Water & Land Drills Guide*! This resource has been developed as part of the *Erasmus+ Sport* initiative - *Kayak Crews 4 Youth* (Kc4u).

In 2024 Kc4u successfully ran two International K4 training camps in Italy and Slovenia for mixed-gender, mixed-nationality crews. Additionally, we hosted in-school crew kayaking events for nearly 600 children, and Slovenia's first dedicated K4 day & competition. Drawing from these varied experiences, we have created several K4 educational resources for kayak coaches and clubs.

K4 paddling has many physical and psychosocial benefits for athletes that extend far beyond the water. However, it typically requires crew members modify their individual paddling styles to achieve synchronisation, speed, and efficiency. This adaptation of technique can be challenging for many athletes as it demands a high level of physical awareness, along with both physical and mental adaptability - qualities which are often underdeveloped in kayakers due to the sport's repetitive, and often individual nature.

With careful programming and good team harmony, technical drills can help athletes master the challenges and nuances of crew boat paddling by improving technical precision and efficiency, resilience and adaptability, communication, and ultimately performance.

Throughout the guide, you'll find a comprehensive collection of water and land drills suitable for paddlers of all ages and levels. These exercises focus on key areas of K4 paddling such as synchronisation, stability, and power distribution. Each drill is accompanied by a video, detailed instructions and objectives, along with tips for coaches on how to implement drills and what to look out for.

We hope this guide serves as a valuable tool for inspiring a new generation of kayakers to push the boundaries of what they can achieve together.

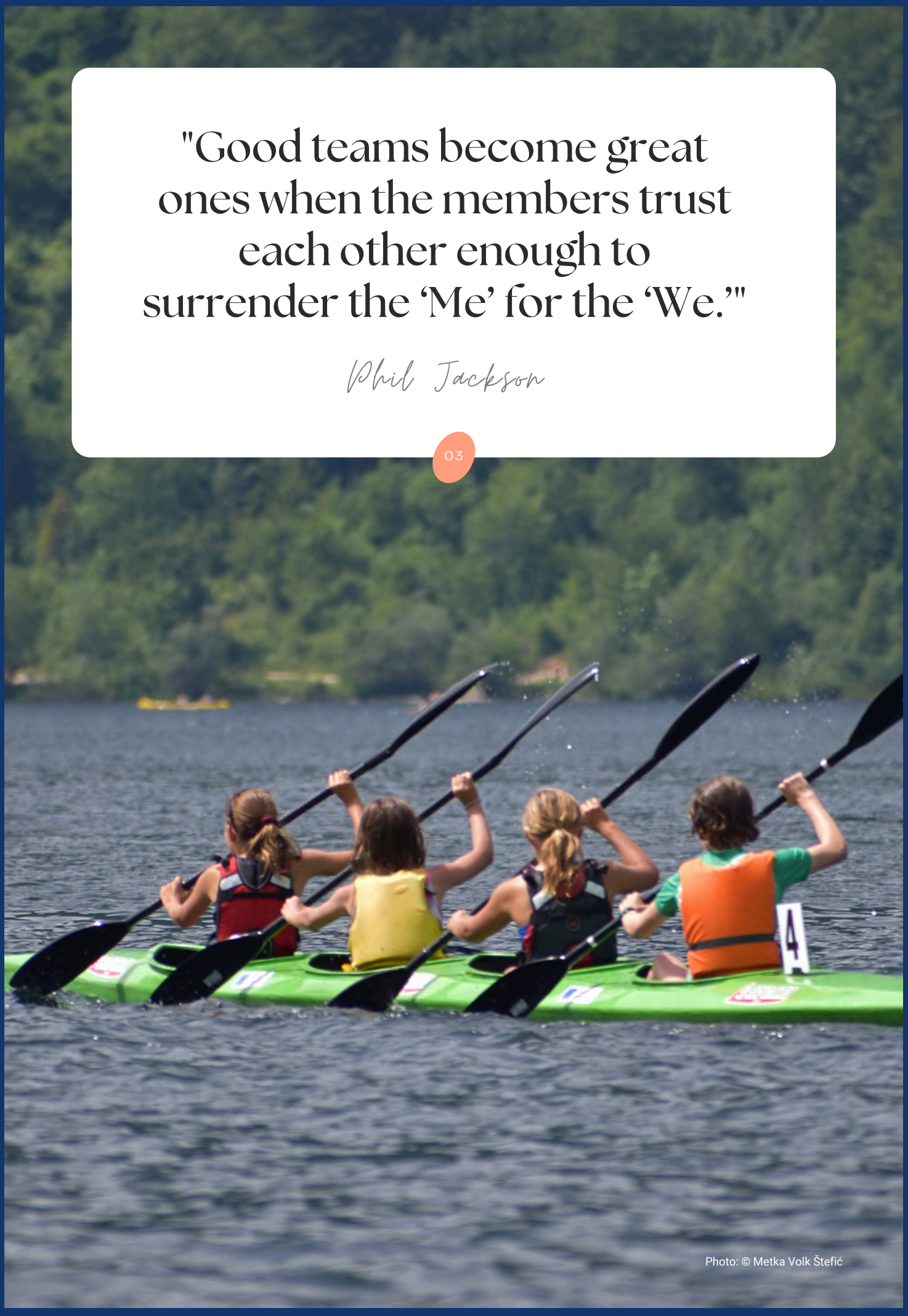
If you're curious about the other Kc4u activities and free resources, be sure to explore our website kayakcrews.eu

Happy Paddling!

"Good teams become great ones when the members trust each other enough to surrender the ‘Me’ for the ‘We.’"

Phil Jackson

03



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IMPROVING CREW BOAT TECHNIQUE

Used judiciously, K4 technical drills are one part of a well-rounded program that can assist athletes in developing the skills and qualities needed for successful crew boat paddling.

By breaking down the stroke into small components which focus on enhancing, automating, and synchronising specific elements in isolation from the overall stroke, drills can help athletes make significant progress in adapting and improving their technique without overwhelming them.

A well-rounded technical program should include drills that work on:

- Timing of the catch
- Blade angle on water entry
- Timing and synchronisation of weight shift during rotation
- Timing and use of inertia
- Forward rotation pattern
- Balance, stability, & lower body control of the boat
- Stroke length
- Timing and distribution of power through the stroke
- Timing of the leg and footwork
- Speed of the arms in the air, and dissociation of the arms from the torso
- Rhythm
- Breathing
- Synchronised gear changing (stroke rate and speed)
- Awareness of other's physical movements
- Ability to react to and follow changes (in stroke rate, power, speed, etc.)

To get the most out of a K4 technical program, athletes also need to work on:

- Clear and respectful communication
- Trust between crew mates
- Willingness and ability to change personal technique for the benefit of the whole crew

Outside of directly working on sport-specific technical drills, it's vital to develop the general physical, mental, and psychosocial skills and attributes that athletes require to elevate their technical practice.

ESSENTIAL QUALITIES

FOR MASTERING SPORT-SPECIFIC TECHNIQUE

STRONG MIND-BODY CONNECTION

HIGH LEVEL OF COORDINATION

MENTAL ADAPTABILITY

Based on a growth mindset

PHYSICAL AWARENESS

Awareness of where body parts are in space and how muscles are functioning to produce movement and stability

RELAXED MENTAL FOCUS (FLOW)

Staying in the moment while remaining process (not outcome) focused

PATIENCE

PHYSICAL ADAPTABILITY

Based on a broad foundation of physical literacy

NON-JUDGEMENTAL CRITICISM

Ability to make continual critical self-assessments in a non-judgemental way

INCORPORATING TECHNICAL DRILLS INTO K4 TRAINING

When, What, How much?

Drills performed without intention (mindlessly) or merely for the sake of repetition, offer minimal value. To elicit real improvement, it's essential for athletes to be mentally refreshed, relaxed, and focused. Therefore, it's vital to thoughtfully consider the timing, selection, and duration of technical training.

When

We generally recommend doing drills after a general warm-up (see page 10), or spread through the session during recovery blocks. On any given day it's always important to read your athletes. Maybe the crew is more mentally focused after paddling for a while, or maybe the whole crew have their heads on another planet that day and would benefit more from doing something else - like some hard interval training.

Younger crews generally struggle more than older ones when it comes to focusing on technical work, and a judicious choice of timing for drills can make a significant difference in their effectiveness. Pay attention to athletes' energy levels and mental state, and be flexible with your schedule to accommodate what works best for them on any given day.

What

With younger or less experienced crews, we recommend regularly working on the full spectrum of technical drills.

With more experienced crews, drills should primarily target the areas of improvement which have been identified through specific assessment or regular water training or competition. However, it always remains beneficial to incorporate a variety of drills to keep training dynamic and to challenge different aspects of crew performance.

Land Drills - Land drills remove boat balance/control from the technical equation and allow athletes to hone in on specific movement patterns and/or timings in a more relaxed way.

Water Drills - Water drills can be used to identify and work on individual and team weaknesses which affect crew boat technique and speed. We recommend having athletes count strokes or numbers out loud for the first repetition of drills, as it helps unify breathing.

How Much

The volume and intensity of drills should be adjusted based on the crew's experience level and the training phase. For novice crews, shorter, more frequent technical sessions can help build foundational skills without overwhelming them. Advanced crews may benefit from longer, more intense sessions that allow for in-depth refinement.

The goals of performing technical drills are to improve control, execution, synchronisation, flexibility, rhythm, and timing, (to ultimately improve speed and efficiency). The duration required to see improvement in these things can vary significantly based on the crew's experience, their focus during the session, and the specific drill being practised.

To ensure that the drills remain purposeful and mindful/intentional;

- Before starting the drill, make sure crews understand what the drill is for, and their improvement/execution goals
- Give crews sufficient time to improve execution
- Allow crews adequate time to recover and reflect on their progress after each drill
- If execution is close to flawless, move on to something else
- If execution doesn't improve after a couple of minutes, pause and discuss what needs to improve and why it may not be working. If execution fails to improve after two or three attempts, move on and come back to the drill in a later session
- Look out for signs of cognitive overload - many athletes experience significant cognitive load when working on technical drills; excessive overload can cause execution quality to deteriorate (negating the benefits of practice)
- Encourage athletes to focus on how the boat, water, and their bodies feel, as well as the sound of the strokes and movements. Over-thinking drills can lead some athletes to suffer from the dreaded 'paralysis by analysis', and consequently cause excessive physical tension
- Use video of the crew's performance to help athletes build a stronger correlation between their internal sensations and actual performance.

Land drills - If you are training a large number of crews simultaneously, we recommend doing land drills as a circuit with around 2 to 5 minutes at each station. If you have a smaller number of crews (or your athletes are very experienced), consider adding a few drills at the end of the general land warm-up.

Water drills - The structure of technical drills on the water largely depends on the number of crews in the session, and their experience levels. We find when doing drills on a set interval timer, many athletes quickly fall into *mindless* execution. To minimise this risk, it's often more beneficial to base the length of each drill on how well the crews perform each drill.

However, for larger groups with multiple crews, using a timer may be the most practical approach, especially for coaches working alone. In this scenario, we recommend a minimum of one minute per drill for younger crews, and at least two minutes per drill for older or more experienced crews. Take time (at least 30 seconds) between each rep or drill to allow athletes to reset and focus on the goals for the next drill.

“Great communication begins with connection.”

Oprah Winfrey

COMMUNICATION, FEEDBACK, & REFLECTION

Crew Communication

As crews work together to improve their technique, athletes often find themselves outside their comfort zones, leading to heightened tensions between crew members. Therefore it's essential they engage in open and respectful dialogue, offering constructive feedback, and support to one another.

Athletes should deliver feedback regarding their teammates' performance in a manner that avoids sounding like a personal attack. Encourage them to use expressions such as "I feel like person X is doing Y" instead of simply stating "Person X is doing Y."

Off-water team-bonding activities, and fostering a healthy training environment and culture will also aid crews in cultivating effective communication styles.

Coach-Crew Communication

What the coach sees and what the athletes feel aren't always in alignment. Therefore it's important to create an environment where athletes feel comfortable sharing their thoughts openly. Encouraging a coach-crew dialogue where athletes can express their perceptions and observations without fear of judgment is key. This collaborative atmosphere not only enhances learning but also builds trust within the team.

External vs. Internal Cues
External cues and metaphors can be extremely useful with many athletes when explaining a drill or physical concept in the early stages of learning. External cues connect the athlete's body to something outside of themselves, which can be a good way of avoiding the dreaded paralysis by analysis.

When the crew becomes more experienced and familiar with drills, using shorter internal cues during drill execution is often more practical as a quick reminder of where the athlete needs to focus their attention.

Tips for communicating about drills

- Make sure the goals of the drill are clear beforehand
- Keep instructions clear and simple
- When analysing areas for improvement, guide rather than tell
- Be patient
- Keep critique non-judgemental
- Celebrate small victories
- Help athletes develop a growth mindset

Video

Video serves as a powerful tool for athletes to strengthen the connection between their internal sensations and the resulting movement patterns, both individually and as a team. When combined with effective coaching techniques and positive coach-athlete relationships, its' use during training can accelerate the development of strong physical awareness and body control.

Generally, video footage from drills should be shown to crews immediately after each drill, while the physical sensations are still fresh in their minds. However, this may not always be feasible when working with a large number of crews, making it necessary to conduct video analysis after the session.

Furthermore, if the team is highly experienced and can identify what wasn't functioning optimally without video feedback (or coach interference), they might prefer to repeat the drill without reviewing the footage.

When you are using video during the session, it's beneficial to ask the athletes questions about their experiences during the drill, followed by what they see in the video (rather than just telling the athletes what you see as a coach).

This approach encourages self-reflection and critical thinking, allowing athletes to draw their own conclusions and insights. By engaging them in this way, you cultivate a deeper understanding of how their internal sensations relate to performance, and promote a sense of ownership over their improvement and paddling.

QUESTIONS FOR BEFORE WATCHING VIDEO	QUESTIONS FOR AFTER WATCHING VIDEO
How did X feel?	Does X look how it felt during the drill? What looks the same or different from how X felt?
Did you feel like you were doing Y?	Does it look like you were doing Y?
What did you notice about Z while you were paddling?	What do you think is causing Z?
Did A feel together?	What do you notice about the synchronisation of A?
What do you think B is going to look like in the video?	Does B look like you expected? How do you think you can improve on B next time?

Younger athletes without a clear picture of an efficient technical model, or those not accustomed to this approach, may require additional guidance or prompts to answer these questions. Although this method may take more time initially, it ultimately fosters more independent and confident athletes and crews who can make smarter, quicker decisions during training and competition.

While video is often used to highlight areas for improvement, you can also compile highlight reels from each crew showcasing moments when they perform drills effectively. This can serve as a valuable tool for visualisation practice.

Finally, consider storing all videos online allowing athletes to review clips at their convenience.

CREW BOAT SESSION WARM UP

For many young athletes, technical training can be like having to eat your vegetables, however, it shouldn't feel like a punishment. So before diving into any technical drills, or paddling, it's great to start sessions with a short general physical warm-up that not only warms up the body, but also puts the athletes in the right mental and emotional state to get the most out of the session, themselves, and each other. When structuring a crew warm-up, think about including activities which:

1

Build a sense of cameraderie

Start warm-ups with fun games which encourage athletes to work together, and spur on some friendly competition.

2

Get athletes out of their heads

If athletes come to training after a long day at school or work, their minds are likely preoccupied with the day's challenges or tomorrow's stresses. Additionally, if training is early in the morning, they may not be fully awake yet. These are not optimal states for launching straight into detailed technical work, first, the athletes need to get out of their heads and into their bodies.

Physical activities which have a level of complexity and/or novelty are good for this. Consider including a short game from a different sport, or a new physical challenge. You may find some of the activities from the *Kc4u School event guide* useful for this.

3

Challenge coordination

Activities which challenge coordination can help establish a good mind-body connection.

4

Wake up fast reaction speeds

Being able to react quickly, is essential for adaptability in crew boats. Games like musical paddles, the paddle game, or shoulders-knee-nose-push up, are great to include in a warm-up.

5

Dynamic Mobility

Keep mobility work before a session dynamic. Static stretching before a session not only has a tendency to create zombies, it can be detrimental to power output for some athletes.

LAND DRILLS

1. K4 Butt Walk

Instructions:

1. Crews sit on the ground in their seat order with their hands behind their heads, and feet touching the back of the person in front of them
2. On a cue from one of the crew members they 'walk' forward. They should push the back of the person in front of them forward with the foot, and 'walk' in synchronisation by **sliding** their butts along the ground. Older or more experienced athletes should aim to keep *both* legs flat on the ground throughout the drill, focusing on the forward movement of the hips.

What it's for

Technical

- control of the hips, pelvis, & core
- forward rotation
- posture
- hip mobility
- shoulder-hip connection

Synchronisation

- lower body & weight shift synchronisation

Coaching Cues

- open the chest
- imagine someone pulling your elbows back
- connect the shoulder to the hip
- clean the floor with your butt
- look straight ahead
- sit tall

What to look out for

- forward movement is driven by the hips, not the UB (shoulders/torso)
- legs should remain in the kayaking position without falling outwards
- hips push the legs foward along the ground, rather than lifting them up (raising one knee often shows a lack of pelvic control and/or mobility)
- poor posture (inability to sit tall and open) caused by limited mobility (hamstring, T-spine, shoulder, hip), or lack of core support

2. Kettlebell Throw Overs

This is a more advanced drill. Athletes should be strong and coordinated enough to throw and catch a 4kg Kettle Bell one-handed before attempting it.

Instructions:

1. Crews sit on the ground in their seat order, with a 4kg Kettlebell on the ground in line with their hip
2. On a cue from one of the crew members they 'throw' the kettlebell from one side to the other, simultaneously sliding the hip and leg forward. The arms should be kept as straight as possible and stop the KB inline with the hip. The forward momentum from the KB should be used to help slide the hip forward along the floor
3. The crew continue to 'walk' forward in sync, whilst throwing the KB's from side to side.

What it's for

Technical

- forward rotation
- control and use of inertias whilst moving
- control of the hips, pelvis, & core
- shoulder stability
- force absoprtion
- posture

Synchronisation

- lower body & weight shift synchronisation

Coaching Cues

- keep the arms wide
- use the inertia of the KB to move yourself forward
- stop the KB at your hip/don't let the KB behind you

What to look out for

- the athletes stop the KB, and don't let it keep travelling behind the body
- shoulders and arms stay stable and strong whilst hands remain soft
- core stays strong and stable against the forces of the KB (doesn't buckle in one or more planes)
- athlete uses the KB's inertia to help move the hip forward

3. Elastic Rotations

Instructions:

1. Crews sit on the ground in their seat order
2. They connect an elastic to the crew member in front and behind them, on both sides
3. They should sit far enough away from each other to keep tension in all the elastics
4. On a cue from the front crew member they begin rotating slowly, keeping the arms straight and hands low, with even tension in the elastics. The whole crew should count out loud together as they rotate
5. Once the crew can rotate with constant and even tension in the elastics, they should increase the tempo.

What it's for

Synchronisation

- connected rotation
- matched 'water' phase length and speed
- breathing

Coaching Cues

- keep the hands low
- keep the elastics tight
- open the chest
- rotate forward
- breathe together
- look straight ahead

What to look out for

- elastics should remain taut, if they bounce up and down, the are losing tension due to a lack of synchronisation
- arms remain inline with the shoulders and connected to the hip rotation
- athletes breathe together

4a. Top Hand Stabiliser - Static

Instructions:

1. Crews form pairs
2. The athlete in front sits on the ground in the kayaking position holding an elastic in the top hand catch frame position
3. Their partner stands behind them holding the other end of the elastic, pulling back strongly enough to prevent the top hand from moving forward
4. The sitting athlete holds the position for 15"-1 min (depending on the strength of the athlete)
5. Repeat for 3 sets on both sides, with all athletes.

What it's for

- isometric exercise to improve shoulder strength and stability
- stable top hand when loaded
- core-top hand connection

Coaching Cues

- hold the shoulder still
- keep the catch frame position
- look ahead
- open the chest

What to look out for

- the athlete maintains a strong cach frame position with the top hand and shoulder (elbow doesn't drift up or forward)
- top hand is supported from the core
- chest remains open

4b. Top Hand Stabiliser - Dynamic

Instructions:

1. Crews form pairs
2. The athlete in front sits on the ground in the kayaking position, holding an elastic in the top hand catch frame position
3. Their partner stands behind them holding the other end of the elastic, creating some tension in the elastic
4. The sitting athlete rotates forward, moving the top hand forward together with the hip
5. The standing athlete can also rotate, being careful to keep enough tension in the elastic so that the sitting athlete needs to work throughout the forward movment
6. Repeat for 3 sets of 10 on both sides, with all athletes.

What it's for

- shoulder strength and stability
- stable top hand when loaded
- core- top hand connection
- forward rotation

Coaching Cues

- lock the shoulder
- keep the top hand high
- move the shoulder and hip togther

What to look out for

- the athlete locks the shoulder to the torso when rotating forward (doesn't 'shoot' the top hand)
- the elbow maintains the starting angle with the chest (doesn't close in)
- the hip, houlder, and hand movements stay connected
- the athlete doesn't pull down with the top hand

5. Lock the blade

Instructions:

1. Crews form pairs
2. One athlete sits on the ground in the kayaking position holding a short broomstick in the catch position
3. Their partner sits in front and to the side, holding the bottom end of the stick lightly in the air just above the ground.
4. *Without* pulling the bottom arm backwards, the athlete hangs off the stick (locked blade) and uses it to pull the opposite leg, hip, & shoulder forward
5. Repeat for 2-3 sets of 10 on both sides for all athletes

What it's for

- locking the blade on the water
- moving forward past the locked blade
- forward rotation
- core connection

Coaching Cues

- hang off the stick
- lift up and forward
- hold the stick in place

What to look out for

- if the working athlete pulls their partner along the floor (or the partner needs to hold the stick with all their strength), they are pulling backwards rather than locking the blade and moving forward past it
- if the top hand shoots forward, there is no connection between the hand, shoulder, core and hip

6. Tennis Ball Rotations

Instructions:

1. Crews stand in a square facing each other
2. Bent over slightly at the hips, each crew member holds a tennis ball in the right hand
3. They come into a rotated position on the right (letting the right knee bend, and hip come forward)
4. On a cue from a team member they rotate, and gently throwing the tennis ball up, catching it with the left hand as they come into the rotated position on the left.
5. They repeat this pattern, keeping the catching and rotation synchronised.

What it's for

- coordination of rotation with hand movements
- relaxed hands with a strong core
- ability to simultaneously vary tension in different body parts
- fast, reactive catching
- catching and rotation synchronisation

Coaching Cues

- keep the shoulder and hip locked together
- keep the hands soft

What to look out for

- excessive full body tension preventing clean catching
- lack of shoulder and hip connection

7. Slow water - Fast air

Instructions:

1. Crews sit on a wobble cushion in seat order holding a short broomstick
2. Following the front seat, they perform a very slow water phase stroke, followed by a very fast air phase movement (exit-catch)
3. This pattern repeats.
4. Once the crew is well syncrhonised, the tempo can be increased - still keeping the water phase longer and slower than the air phase.

What it's for

Technical

- arm and scapula dissociation from the core -air phase control
- fast arm movements
- differentiation of arm movement speeds
- core control
- stability

Synchronisation

- water & air phase paddle movement
- rotation

Coaching Cues

- freeze the body - relax the shoulders (in the air)
- light arms in the air
- move the hip and shoulder together
- sink into the wobble cushion
- imagine your broomsicks are tied together

What to look out for

- does the fast movement of the arms in the air throw the athlete of balance? If it does, they haven't dissociated the arms and shoudlers from the core)
- does the core, torso, and LB remain stable and still during the air phase (or does the athlete 'unwind' the rotation)
- is excessive tension in the hips and pelvis preventing good stability

8. Swiss Ball Paddling

Instructions:

1. Crews form a seat order line with a swiss ball and their paddle
2. They jump onto the swiss paddle, and come up into the kneeling position
3. Once everyone is stable, they air paddle together following cues from the front

Less experienced athletes may find it too challenging to paddle together on the balls. In this case, they can practice getting onto the swiss ball and coming into the kneeling position.

What it's for

- stability
- leg controlled balance
- team work
- communication
- paddle synchronisation

Coaching Cues

- grip the ball with your legs
- relax your shoulders

What to look out for

- overly tense upper body
- 'lazy' legs (which don't hold the ball)

9. Push-up Square

Instructions:

1. Each crew forms a square on the ground
2. One at a time, they place their feet on the back of the person behind them
3. On cue from a leader they peform push ups

What it's for

- upperbody & core strength
- crew communication

Coaching Cues

- keep the core engaged
- push the floor away from you
- stomach up

What to look out for

- good core positioning- no banana backs
- strong upper back (no collapsing into the scapula)

WATER DRILLS

1. Rotate Low

Instructions:

1. The crew holding their paddles out in front of them, just above the boat deck
2. They begin rotating together
3. As they rotate, they try to move the boat forward by driving the footrest forward with the legs, and using body inertia.
4. Once the crew has control of the rotation at a slow tempo, they should increase it gradually.

What it's for

- synchronised weight shift & leg timing
- forward rotation
- pushing the boat forward with the feet and legs
- stability
- boat control with the lower body
- shoulder-hip-foot connection

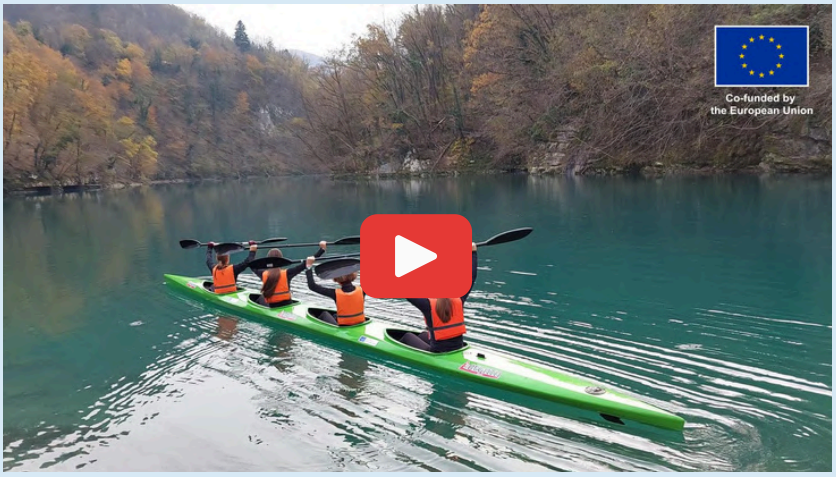
Coaching Cues

- push the boat forward with your feet
- keep the shoulder and hip connected (don't over-rotate)
- finish the rotation with the weight forward on the footrest

What to look out for

- are the hips involved in the rotation, or are the athletes rotating from the waist
- do the athletes over-rotate with the upper body (swinging behind the line of the body)
- does the crew move the boat forward with a forward rotation pattern
- can the athletes control the balance of the boat (keep it still) with their lower bodies
- do the athletes push the footrest forward, or the leg backwards

2. Rotate High



Instructions:

1. The crew hold their paddles with straight arms fully extended above the head
2. They begin rotating together
3. As they rotate, they try to push the boat forward using the legs and body inertia.
4. Once the crew has control of the rotation (and boat) at a slow tempo, they should increase the tempo gradually.
5. Advanced crews can randomly switch tempos.

What it's for

- synchronised weight shift & leg timing
- stability
- boat control with the lower body and core
- forward rotation
- pushing the boat forward with the feet and legs (for MK4's and advanced K4's)
- shoulder-hip connection
- posture

Coaching Cues

- use the footrest to hold the boat
- finish with the weight forward on the footrest
- sink into the seat (stay relaxed)
- keep the rotation in front of you
- connect the hip and shoulder
- push the boat forward with your feet

What to look out for

- do the athletes shift their weight together
- do they control the balance of the boat with their lower bodies
- can they stay relaxed enough with the hips and pelvis
- are the hips involved in the rotation, or are the athletes rotating from the waist
- can the athletes sit tall and open the chest
- does the crew move the boat forward with a forward rotation pattern

3. Catch Drill

Instructions:

1. The crew start the boat moving
2. Once reaching a slow-medium tempo, they begin the drill.
3. Before the 4th stroke, the crew pause in the air in the catch position with the blade tip just above the water. They hold this position for a full stroke count.
4. They continue this pattern, starting on the side they were paused on, counting out loud with the pattern and rhythm: 1-2-3-pause, 1-2-3-pause, etc.

Beginner crews may benefit from pausing after the 5th stroke instead of 3rd.

What it's for

- catch shape/frame preparation
- syncrhonised, clean catch
- boat control during the air phase
- ability to freeze the rotation in the air
- boat glide feel
- arm controlled catch (not a full body movement)

Coaching Cues

- freeze the rotation
- wait just above the water
- breathe/count together
- let the boat glide (while waiting in the air)

What to look out for

- the crew lets the boat glide on the pause
- the catch is well synchronised
- the angle of the shaft in the air pause is not too flat, or too vertical (unless that was a specific intruction)
- blade enters the water cleanly
- athletes wait for the blade to fill with water (blade lock), before rotating
- athletes freze the rotation (don't unwind) during the air phase

4. Catch + Touch

Instructions:

1. The crew start the boat moving
2. Once reaching a medium tempo, they begin the drill.
3. After the third stroke, they briefly touch the water with the tip of the blade on the side of the 4th stroke, before lifting the paddle over the boat deck and touching the water on the other side of the boat
4. They return the blade to the side of the 4th stroke, and repeat the sequence
5. The counting and rhythm should be: 1-2-3-touch-touch, 1-2-3-touch-touch

What it's for

- balance and stability
- lower body boat control
- arm dissociation
- forward rotation synchronisation
- weight shift syncrhonisation

Coaching Cues

- freeze the rotation
- light arms
- breathe/count together
- let the boat glide

What to look out for

- athletes don't unwind the rotation when bringing the paddle back from the wrong side of the boat
- hips are moving and weight is being shifted forward with the rotation
- athletes can control the boat in the rotated position while moving the paddle over the deck (don't just sit square and move the arms)

5a. One sided - Alternate

Instructions:

1. The 1st & 3rd seats, and 2nd & 4th seats paddle on the same side, with 1 & 3 starting on the Left, 2 & 4 on the Right.
2. Everyone performs one-sided strokes, bringing the paddle back on the same side as the stroke, keeping the blade clear of the water on the return.
3. More experienced crews switch sides after 4 strokes, keeping the stroke rhythm steady. Less experienced crews switch after every 8 strokes.
4. Repeat this pattern for the duration of the exercise.

What it's for

- building a connection between alternate seats
- feeling where any stroke imbalances are on each side
- crew match the timing of force application and spread of power through the water phase
- matching of force on the blade and footrest
- stability
- synchronised weight shift
- forward rotation
- timing of leg and hip movements

Coaching Cues

- catch together
- keep the rhythm steady
- long water phase
- fast return
- keep the blade out (on the return)
- switch together
- lift (yourself) up off the blade

What to look out for

- crew apply power to the blade and footrest at the same time
- stroke length is long and even between the crew members
- blade is kept out of the water on the return
- top hand doesn't drop down excessively during the stroke
- crew rotates forward together during the stroke and doesn't finish with all the weight shifted to the back of the seat at the end of each stroke
- leg and hip move slowly enough to support the stroke

5b. One sided - Unison

Instructions:

1. Crew starts the boat moving at a medium speed
2. With the boat moving, everyone switches to paddling together on the same side for 4 or 8 strokes, returning the paddle in air on the side of the stroke (4 strokes less experienced, 8 strokes more experienced)
3. The crew then paddle 4 strokes normally before switching to 4 or 8 strokes on the other side
4. Pattern is maintained for the duration of the exercise keeping a steady rhythm

What it's for

This drill tests the same skills as the alternating version in 4a, but is more difficult due to the greater balance challenge.

This greater diffiiculty requires the crew to maintain control of the boat with their feet and lower body.

Coaching Cues

- catch together
- keep the rhythm steady
- long water phase
- fast return
- keep the blade out (on the return)
- rotate forward
- hold the boat with the feet

What to look out for

Look out for all the points of drill 4a. Inconsistencies between crew members will be more obvious.

6a. Swing Drill - Alternate

Instructions:

1. The crew starts the boat moving at a medium tempo
2. On cue from the front seat, the crew start counting strokes together
3. Experienced crews paddle 4 strokes together, then seats 1 & 3 continue paddling together for another 4 strokes while seats 2 & 4 air rotate for 4 strokes at the same tempo, holding their paddles out with straight arms just below shoulder height. Pairs then switch for the next 4 strokes
4. Less experienced crews perform the same pattern, swapping every 8 strokes instead of 4
5. This pattern is repeated for the duration of the exercise.

Variation: Crews struggling with stability can paddle 4 or 8 strokes normally together between each change of pair

What it's for

- power matching and timing between alternate crew members
- weight shift synchronisation
- forward rotation
- lower body boat control
- developing a feel for how other crew members apply power and how the boat reacts

Coaching Cues

- feel the rotation together
- rotate forward
- keep the rhythm steady
- connect the hip and shoulder
- match the catch
- feel the footrest

What to look out for

- all crew members keep rotating at the same speed regardless of if they're paddling or not (don't speed up when air-rotating)
- stroke length and power distribution is matched between crew members
- power is applied from the front of the stroke
- rotational pattern and weight shift matches
- air rotators don't over rotate from the waist (behind themselves)
- air rotators use their lower body for stability

6b. Swing Drill - Unison

Instructions:

1. The crew start the boat moving at a slow-medium tempo
2. On cue from the front seat, they start counting strokes together
3. After the 3rd stroke (or 5th for less experiencd crews), the entire crew air-rotate for 2 strokes, focusing on maximum hip rotation
4. The repeat the pattern starting on the side the rotation finishes
5. The rhythm is: 1-2-3-swing-swing, 1-2-3-swing-swing
6. This pattern is repeated for the duration of the exericse

What it's for

- lower body boat control
- syncrhonised weight shift and rotation
- synchronised catch
- forward rotation
- hip-shoulder connection

Coaching Cues

- push the boat forward with the feet (during air rotations)
- rotate forward
- connect the shoulder and hip
- keep the rhythm steady

What to look out for

- rotation comes from the lower body, starting from the footrest
- athletes don't over-rotate from the waist, or with the arms (den't rotate behind the line of the body)
- shoulder stays connected to the hips whilst swinging
- rotation is forward (not backwards)

7. PEEP: Power, Easy, Easy, Power

PEEP is a complex drill which combines, the catch, one-sided, and regular power drills into one. Crews will typically need to spend more time on this drill to see improvement.

Instructions:

1. On cue from the front seat, the crew execute a power stroke, applying maximum force to the blade and footrest at the beginning of the stroke, letting the boat glide after
2. This is followed by two easy (light & relaxed) strokes
3. The 4th stroke is another power stroke, after which the crew return to the catch position on the same side through the air - letting the boat glide and waiting with the blade just above the water. Crews should aim to make this the strongest stroke of the cycle.
4. On the 5th stroke the pattern starts again on the side the crew is paused on
5. The rhythm is: Power (1,2), Easy (3), Easy (4), Power (1,2), return & wait (3,4), or if counting aloud; Power, 2, Easy, Easy, Power, 2, 3, 4.
6. This sequence is repeated for the duration of the exercise.

What it's for

- building crew boat power
- synchronised timing of force application
- control of forces
- ability to vary levels of body stiffness and power
- boat glide management
- catch frame position

Coaching Cues

- let the boat glide (after power strokes)
- keep the frame stiff (power strokes)
- lock the blade
- soften the easy strokes

What to look out for

- the crew doesn't dig the boat excessively downwards on power strokes (by pulling down and back)
- power strokes use a clean catch, good blade -lock, and a stiff frame
- athletes don't collapse through the core on power strokes (arms lower the blade into the water, not the body)
- weight shift is synchronised and controlled on air-returns
- blade stays out of the water on the air returns

8. Stroke Rate Pyramid

Photo: © Metka Volk Štefić

Instructions:

1. The crew begin this drill from standing
2. They start with a slow stroke rate which raises in 5 blocks of 10 strokes each, to a maximum SR (the number will vary depending on the experience and skill of the crew).
3. After reaching a max SR, they descend down the pyramid, slowing the SR in 4 blocks of 10 strokes
4. Example of stroke rate blocks: 50-70-90-110-130-110-90-70-50 SPM

Tempo can be controlled by various seats, or by the coach. When athletes are leading the tempo, start with the athlete in the front seat. They should count the strokes out loud. After this, other seats can control the tempo.

Variation: Instead of increasing and decreasing the tempo as a pyramid, the crew can practice jumping between blocks of 10 strokes at random fast and slow tempos.

What it's for

- adaptability
- technical control at different strokes rates
- building gears
- gear switching ability
- ability to follow SR changes
- ability to quickly find the correct stroke length at diffrent SRs

Coaching Cues

- unless you are counting the strokes to give the crew the tempos, be quiet and let the crew find each other
- before starting athletes can be reminded they are going up and down a step pryamid, not the side of a triangle

What to look out for

- do specific athletes have more trouble following tempo changes than others
- do athletes find the correct stroke length for the SR (getting shorter on the way up, and longer on the way down)
- do the athletes ascend and descend in clear tempo blocks

9. Blind Paddling

Instructions:

1. While paddling at a steady pace, athletes in the 2nd and 4th seats close their eyes and keep paddling in sync with others. They focus on sensing the rhythm through feel and sound.
2. After eight strokes, they switch roles, with seats 1 & 3 closing their eyes.
3. This alternating pattern continues.
4. Once the athletes feel confident, the whole crew can attmpt to close their eyes simulataneously for at least 8 strokes at a time.

What it's for

- boat control
- heightened sensory awareness - ability to 'feel' the other seats
- proprioception
- lessen dependence of the visual system for balance

Coaching Cues

- Be silent during the drill
- Before starting remind the crew to listen to the strokes(water), each other, and the boat

What to look out for

- do specific athletes lose more control of their balance with their eyes closed
- can the crew maintain the rhythm with their eyes closed
- does the crew syncrhnisation get better, worse or stay the same when veryone has their eyes closed

10. Gondola Paddling/SUK

Instructions:

1. The crew start the boat moving slowly
2. Initially, participants take turns attempting to stand up in the boat. Those who remain seated must concentrate on stabilising the boat while continuing to paddle. The standing crew member tries to paddle gondola style.
3. Once everyone has stood up individually, the crew stand up and gondola paddle in pairs.
4. Ultimately, the group progresses to a stage where the entire crew stands up simultaneously.

Extra challenge: two crew members sit facing backwards and paddle with the rest of the crew

What it's for

- trust building
- balance
- stability
- team communication

Coaching Cues

Be silent during the drill (and ready assist with any necessary rescues)

What to look out for

- do the seated crew panic when someone stands up or are they able to remain relaxed (tension kills stability)
- is the crew able to trust each other
- how well do the crew communicate

THE KC4U TEAM

Kayak Crews 4 Youth is an international collaborative project developed and managed by the coaches and athletes of Kajak Klub Zlatorog and Circolo Nautico Oristano. Our dedicated crew has a wealth of experience in nurturing talent and crafting programs for everyone from beginners taking their first strokes, to seasoned Olympians.

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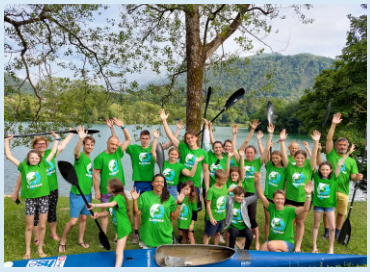

Kajak Klub Zlatorog - SLO

Nestled in the small town of Most na Soči - Slovenia, KKZ is home to National Team athletes and coaches, as well as kayakers at various stages of their paddling journey. Alongside challenging the status quo through innovative programs, KKZ is dedicated to empowering more girls through sport. Their *Paddle PWR-Girl PWR* initiative was honoured with the EU's 2022 #BeEqual Award for gender equality in sport.

Circolo Nautico Oristano - ITA

Established in 1970, CNO has a long tradition of coaching kayak, canoe and other watersport athletes of all levels. Located in Cabras on the island of Sardinia, CNO is an integral part of the local community, and home to three Italian National Team coaches along with many exceptional athletes.

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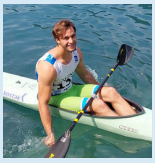

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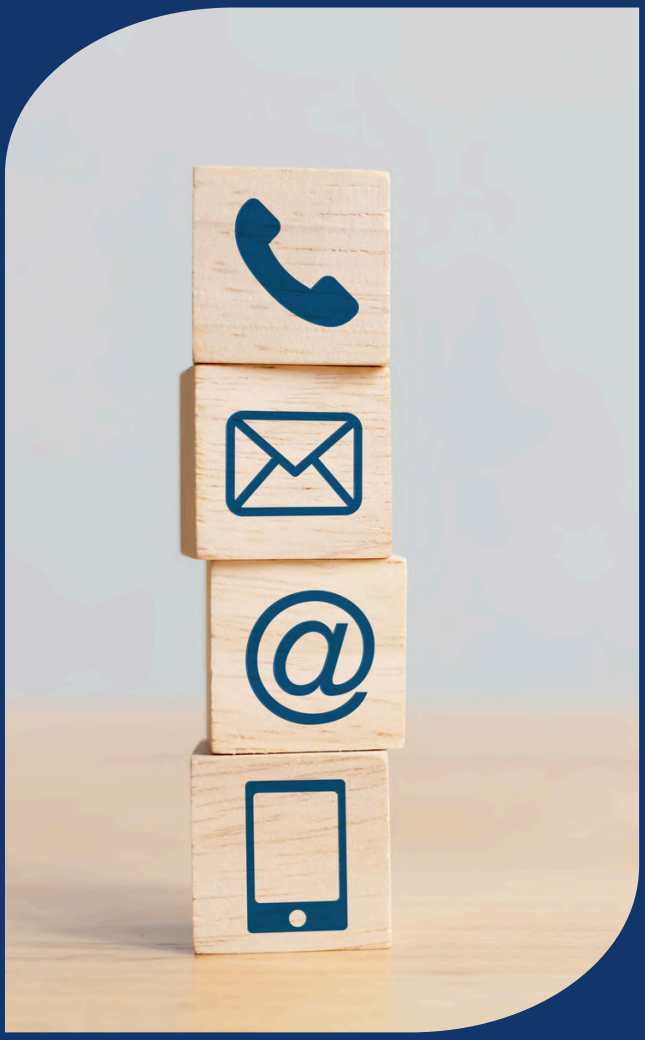

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