

# QUEENSLAND LONG TERM ATHLETE DEVELOPMENT PLAN



This Long Term Athlete Development Plan was written and developed by Queensland coaches to help Queensland coaches in assisting young QLD athletes and ensuring they reach their potential. The authors and editors have freely given of their time and knowledge to develop this reference tool to aid coaches in the planning of on-water sessions.

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## LONG TERM ATHLETE DEVELOPMENT PLAN (LTADP)

### Introduction:

The aim of this resource is two-fold. It is to support athletes and provide them with a development pathway as they move through their early rowing career. It also acts as a coaching manual that has been written and edited by Queensland coaches for Queensland coaches.

As a coach Rowing Queensland wants coaches to teach the basic parts of the rowing stroke exceptionally well. RQ encourages all coaches to create an environment of excellence no matter if you are coaching a State crew or a group of year 8's learning to row. There is a great deal of leeway for coaches to experiment and guide athletes in the areas of race preparation, recovery methods, training programs, etc however RA wants coaches to follow the same technique model and similar technique language. Excellence is a habit of which daily behaviors are important. RQ supports coaches in their aim to be credible, consistent, empathetic, eliminate sarcasm but have a sense of humor. Coaches should always use positive non-verbal cues to teach skills and never criticise athletes, only their behavior or performance.

When coaching athletes understand - that which remains unsaid remains. Bad habits manifest during racing on that are not addressed in training. Have good self-awareness and management around making difficult decisions,

**relax → make a decision → act.**

Never assume the athlete's understand what you have said, always question for their understanding. When coaching - appearance, body language, punctuality, organisation and manner are important. When giving instructions be confident, enthusiastic, well structured and talk with conviction and always expect high standards. When talking keep in mind your message, the audience, your tone, pace and eye contact. Be direct with your instructions and remember less is often more.

Always train with the purpose to improve skill through technique and blade acceleration. Avoid saying to the athlete "don't keep doing ..... " As soon as you tell athletes something good or bad they will only think of what you have said. We learn from our mistakes but are motivated by our success.

As a modern coach you must understand the different learning styles of your athletes. While you will have all learning styles in your squad auditory, verbal, kinesthetic and visual, due to young people being so centered around screens they are mostly visual. This means that video should play a large part in your coaching and technique improvement.

### Rigging Measurements:

The Rigging Measurements listed in the table are average measurements and simply a place for coaches to start. Coaches should feel free to change these if they feel their crew would benefit from a different rig.

### Skill Acquisition:

Skill Acquisition is a level of rowing movement that athletes should aim for throughout the season and can achieve at the end of their season. If crews reach the level of skill listed coaches should move to the next level and start their crews moving towards a higher level.

Understand the difference between a technique model and rowing style. This manual has information on technique that matches the Rowing Australia technique model. Rowing style is something that you develop as a coach that is a specific movement solution that harnesses your athlete's individual strengths.

### Training:

Training is the number of sessions per week and a rough guide as to how many km per session. Coaches should go consider the listed km per week a medium week for 1<sup>st</sup> and 2<sup>nd</sup> crews and a heavy week for low ranked crews. Aim for quality rather than quantity → 10,000 hours, realizing that when athletes technique breaks down, injuries can result.

YEAR 8 & 9 GIRL SCULLING				
Rigging Measurements 4x	Oar Length 286cm	In-Board 90cm	Span 160cm	Pitch 4 degrees
Rigging Measurements 1x	Oar Length 286cm	In-Board 90cm	Span 160cm	Pitch 4 degrees
General Aims for Athlete Development	<p>The Aim for Under 13 and/or 14 is to introduce as many athletes to rowing as possible and to impart on them a love and enjoyment for the sport.</p> <p>It is vital for coaches in the young year levels to coach perfect practice, give quality feedback and repetition of technique exercises. Coaches are encouraged to be experimental and enervative to keep athletes challenged and the training enjoyable. Ensure when giving instruction always talk about what to do, never coach what not to do.</p> <p>With young athletes use simple but strong coaching strategies to focus on basic principles e.g.</p> <ul style="list-style-type: none"> <li>• Large to small... Rig → rhythm, and run</li> <li>• Grip and posture</li> <li>• Identify faults and work backwards</li> <li>• Use phrases such as "It will feel like..."</li> <li>• Name the part of the stroke to improve – give athletes the change – then give time to change.</li> </ul> <p>Under 14's should be taught to respect and look after equipment as well as have basic rigging knowledge:</p> <ul style="list-style-type: none"> <li>• taking riggers on and off the boat,</li> <li>• changing foot-stretchers,</li> <li>• putting a seat back on the slides.</li> </ul> <p>In these early years due to athletes training 3 or 4 times a week there is no need to have heavy or light weeks. Simply continue to increase the training load and intensity in each session as the season continues. As the athletes fitness and technical proficiency increases, introduce them to longer rowers where they are holding steady rates and pressure for the entire row. Coach them through the boring times with changing technique exercises and short bursts of speed work.</p> <p>Having athletes enjoy the sport will be achieved by:</p> <ul style="list-style-type: none"> <li>○ Building solid crew friendships and success on the water.</li> <li>○ General understanding of grip, balance and coordination of body sequence.</li> <li>○ Success on the water should be gained by strong coaching method.</li> <li>○ Posture at the front more than the back.</li> <li>○ Basic rigging knowledge is being able to rig and de-rig a boat successfully and unassisted,(to be taught initially by coaches).</li> <li>○ Focus on the simple parts of the stroke.</li> </ul> <p>When warming up in training try to make it as close to the race warm-up as possible. This is done,so if the crew is late getting to the start line their warm up only takes the race distance.</p>			



<p><b>Technique Skill Acquisition</b></p>	<p>Athletes should understand basic technique which is the ability to name the parts of the stroke (catch, finish, recovery, etc.) and understand basic movements that they should be doing at each part of the stroke (even if they are yet to achieve it). The ability to demonstrate these skills will be gained by systematically working through a training program and reinforcement throughout the season.</p> <p>Technique</p> <ul style="list-style-type: none"> <li>• Basic blade acceleration from catch to finish</li> <li>• Steady blade placement at the catch and an understanding of not rushing into the water.</li> <li>• Athletes should work on solid connection at the catch e.g. not catching the water by lifting the shoulders and throwing them towards the bow and/or not shooting the seat towards the bow and leaving the handle in the same place.</li> <li>• Square blades and an attempt to achieve balance for a set number of strokes.</li> <li>• Strikes at different points of the stroke.</li> </ul>	
<p><b>Training Program Information</b></p>	<p><i>Distance</i></p> <p>1x – 6km to 8km 4x – 10km to 12km</p>	<p><i>Session Time</i></p> <p>Around 60 to 70 minutes</p>

YEAR 10 GIRL SCULLING				
Rigging Measurements 4x	Oar Length 286cm – 288cm	In-Board 88cm - 89cm	Span 158cm	Pitch 4 degrees
Rigging Measurements 1x	Oar Length 284cm – 286cm	In-Board 89cm - 90cm	Span 160cm	Pitch 4 degrees
General Aims for Athlete Development	<p>The Aim for Under 15 is to continue increasing athlete's technique ability, increase the structure of the training program and introduce more Strength and Conditioning sessions. When writing your training program start include frequency of training, an increase in volume and intensity which leads to overload.</p> <p>Athletes rigging knowledge should also continue to increase being taught about span, in-board and oar length as well as when and how to change or modify these.</p> <p>Athletes should also start gaining an understanding and mastery of speed, length, power, training and racing rate. Coaches continue to talk about connection at the catch between blade, handle upper body and legs. Athletes begin mastering steadiness off the back turn through increased strength and posture. Athletes also increase their skill steadily moving into the catch with control avoiding rush while insuring head and should move in and out of the catch on the same horizontal plan.</p> <p>Coach athletes to row with long stroke length → body length + leg length = total length. High quality blade work and release at front of puddle.</p> <p>Transfer of practice to competition depends on the extent to which practice resembles the performance context. Teach athletes a race warm-up to be done both in training and on race day. Coach the importance of a good warm-down. In each training session allow enough time to have a slow steady 5-minute warm-down. Make sure it's done with perfect technique. Remember, the best practice for rowing is rowing.</p> <p>Improved hamstring flexibility will assist maintaining posture from mid-drive to finish. Work on Pelvis rock-over which is the ability to tilt pelvis forward off the back of the stroke rocking forward to set for the front of the stroke sets up front stroke.</p> <p>Posture and compression at the catch is important for effective connection between blade and foot stretcher. Increased glut flexibility will allow an for an upright pelvis at the catch and correct posture.</p> <p>Athletes should be introduced to nutrition education. As athletes look to improve their quality of training promote the benefits of good nutrition. It is ok to talk about ideal body size but don't use personal examples in the crew or year level. In your planning avoid trouble around competition and travel. Finding the balance between too much energy = poor body composition and to little energy = time out of training, illness, poor iron, low muscle fuel stores, negative mindset, inadequate recovery.</p> <p>Council athletes around making good choices around:</p> <ul style="list-style-type: none"> <li>• food quality,</li> <li>• eating correct amounts through heavy and light training times,</li> <li>• eating around growing and finish growing,</li> <li>• eating at the wrong time,</li> <li>• don't get sucked into diet fads,</li> <li>• understanding of self.</li> </ul>			

<p><b>Technique Skill Acquisition</b></p>	<ul style="list-style-type: none"> <li>• Continue to increase athlete's blade acceleration from catch to finish allowing better paddling speed and rhythm ratio. This will allow athletes to increase the distance they are able to paddle for.</li> <li>• Continue coaching athletes blade placement, aiming to catching the water more efficiently at speed with little to know splash and limiting the amount of water missed.</li> <li>• Square blades for minutes rather than a stroke number.</li> <li>• Holding a strike both at the catch and finish position with blades off the water for extended time and repeated strokes.</li> <li>• If not already done so introduce roll-ups and as the season continues increase the number of roll-ups a crew can do in a row.</li> <li>• Athletes should start and increase their mastery of eyes closed, insuring they don't rush forward and they feel the rhythm rather than watching it.</li> <li>• Athletes should also be able to row for increasing periods with feet-out giving more control around the back turn.</li> </ul>	
<p><b>Training Program Information</b></p>	<p><i>Distance</i></p> <p>1x – 6km to 8km 4x – 10km to 12km</p>	<p><i>Session Time</i></p> <p>Around 80 to 90 minutes</p>



YEAR 11 & 12 GIRL SCULLING				
Rigging Measurements 4x	Oar Length 290cm	In-Board 88cm - 89cm	Span 156cm - 158cm	Pitch 4 degrees
Rigging Measurements 1x	Oar Length 286cm – 288cm	In-Board 89cm - 90cm	Span 160cm	Pitch 4 degrees
YEAR 11 & 12 GIRL SWEEP				
Rigging Measurements 8+	Oar Length 372cm	In-Board 84cm - 85cm	Span 114cm - 115cm	Pitch 4 degrees
Rigging Measurements 2-	Oar Length 370cm	In-Board 85cm	Span 115cm	Pitch 4 degrees
General Aims for Athlete Development	<p>Athletes will increase their training loads and should continue their successful results in races. Athletes will have to have increased help to manage their increased training loads with increased study commitments.</p> <p>There needs to be a major focus on what looks like effortless rowing, but there is a strong relaxation that in fact it is effort-full.</p> <p>Continue to extend training sessions and hold for longer periods the time crews can hold effortless and easy rowing through consistent acceleration. Coaches should also increase athletes skills with correctly sequenced drive phase and moving the boat together. Athletes need to understand how rowing together feels and how to accelerate the boat as a crew.</p> <p>Coaches need to be aware as the work load increase there is increased energy needs hence also a great need for continued nutrition education. Coaches can look for the following warning signs that an athlete has inadequate energy needs:</p> <ul style="list-style-type: none"> <li>• Early fatigue in long sessions</li> <li>• Higher than expected RPE</li> <li>• Poor concentration</li> <li>• Sugar cravings</li> <li>• More frequent colds / flu</li> <li>• Anger / anxiety</li> <li>• Reduced intensity, low lactate</li> <li>• Everyone is different, needs change with training, growth, lean mass</li> </ul> <p>Athletes and coaches should be aiming continue to improve concentration, rhythm, balance, blade-work efficiency and physical strength through starting a well structured and supervised weights program. Strength and Conditioning coaches should be attending training on occasions to ask for coaches input as to where athletes needs to improve strength.</p> <p>The coach should aim to educate athletes to the point they can fully look after themselves both in the daily training environment and on a regatta day.</p>			



<b>Technique Skill Acquisition</b>	<ul style="list-style-type: none"> <li>• The most important step-up is athletes being able to hold blade pressure, rhythm and efficient technique for longer and longer sessions without the coach needing to constantly remind athletes about it.</li> <li>• Blade acceleration from catch to finish allowing better race rhythm, building on last season's better rhythm in paddling speed.</li> <li>• Square blades with other technique exercises e.g. feet-out, eyes closed, inside hand, outside hand.</li> <li>• Stand on the foot stretcher, push through the heels and connecting the trunk and legs allowing there to be a lifting in the gluts from the seat.</li> <li>• Double strikes at different places down the slides.</li> <li>• Pelvic tilt at both the catch and the finish. ID and demonstrate good posture</li> <li>• Correct feet height to assist club catch compression.</li> <li>• Seat change of direction at the blade entry</li> <li>• Pelvic tilt → chest / shoulders / head → effect</li> <li>• Align change with how it feels → "It will feel like"</li> </ul>	
<b>Training Program Information</b>	<i>Distance</i>  <b>1x – 12km to 14km</b> <b>4x – 14km to 18km</b> <b>2- – 12km to 14km</b> <b>8+ – 14km to 18km</b>	<i>Session Time</i>  <b>Around 90 to 110 minutes</b>

## GIRLS 1<sup>ST</sup> VIII & JUNIOR

<p><b>General Aims for Athlete Development</b></p>	<p>The coach should aim to educate athletes to the point they can fully look after themselves and their boat both in the daily training environment and on a regatta day.</p> <p>Athletes should increase their vigilance with training and discipline, especially in their afternoon sessions that could be individual. Athletes need to increase their general hard work and quality of all their training. There must be no short cuts or excuses.</p> <p>Continue mastering effortless and easy acceleration of the boat together. Reinforce the idea that acceleration must be achieved together if the boat is going to feel light and fast. Athletes need to understand how applying pressure at different parts of the stroke will negatively affect boat run and feel.</p> <p>Allow the boat to move underneath the rowers. Don't upset the boat run and all the acceleration though limiting incorrect movements on the recovery. By now rowers should have a strong notation of steadily moving forward into the catch.</p> <p>Learn to stand on the foot-stretch, bend the blade and load-up at the catch. Don't upset the boat run and all the acceleration by throwing the weight towards the stern. Athletes skill of placement with hands lifting into the catch and the seat never stopping, but simply changing direction as the blade is placed needs to continue to be increased though listed technique exercises and video.</p> <p>During training paddles allow the boat to fully run between strokes especially while the boat is at its fastest point of the stroke, the release.</p>	
<p><b>Technique Skill Acquisition</b></p>	<ul style="list-style-type: none"> <li>• Blade acceleration should be mastered to the point that it is done in racing and paddling and in fact there is no difference between a racing stroke and a training stroke. The difference is simply in the time the athletes moves into the catch.</li> <li>• Athletes should be increasing their catch skill with catch technique exercises, e.g. dips, slap catches and pauses or strikes just before the blade is feathered.</li> <li>• Placement at the forward limit of an athlete's reach and missing no water and causing no splash.</li> <li>• Correct blade depth from catch to finish.</li> <li>• Perfect posture through increasing strength at the catch and finish.</li> </ul>	
<p><b>Training Program Information</b></p>	<p style="text-align: center;"><i>Distance</i></p> <p style="text-align: center;"><b>14km to 20km</b></p>	<p style="text-align: center;"><i>Session Time</i></p> <p style="text-align: center;"><b>Around 90 to 120 minutes</b></p>

GIRLS 1 <sup>ST</sup> VIII & JUNIOR SCULLING					
Sculling Rigging Measurements	1x	<i>Oar Length</i> 284cm – 286cm	<i>In-Board</i> 88cm - 90cm	<i>Span</i> 159cm - 160cm	<i>Pitch</i> 4 degrees
	2x	<i>Oar Length</i> 286cm – 288cm	<i>In-Board</i> 87cm - 89cm	<i>Span</i> 159cm - 160cm	<i>Pitch</i> 4 degrees
	4x	<i>Oar Length</i> 288cm	<i>In-Board</i> 87cm - 89cm	<i>Span</i> 156cm - 158cm	<i>Pitch</i> 4 degrees
GIRLS 1 <sup>ST</sup> VIII & JUNIOR SWEEP					
Sweep Rigging Measurements	2-	<i>Oar Length</i> 370cm	<i>In-Board</i> 116cm	<i>Span</i> 86cm	<i>Pitch</i> 4 degrees
	4-	<i>Oar Length</i> 372cm	<i>In-Board</i> 115cm	<i>Span</i> 85cm	<i>Pitch</i> 4 degrees
	8+	<i>Oar Length</i> 372cm	<i>In-Board</i> 114cm	<i>Span</i> 84cm	<i>Pitch</i> 4 degrees



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<p><b>Training Program Information</b></p>	<p><i>Distance</i></p> <p>1x – 12km to 14km 4x – 14km to 16km 2- – 12km to 14km 8+ – 14km to 18km</p>	<p><i>Session Time</i></p> <p>Around 90 to 110 minutes</p>

## BOYS 1<sup>ST</sup> VIII & JUNIOR

<p><b>General Aims for Athlete Development</b></p>	<p>The coach should aim to educate athletes to the point they can fully look after themselves and their boat both in the daily training environment and on a regatta day.</p> <p>Athletes should increase their vigilance with training and discipline, especially in their afternoon sessions that could be individual. Athletes need to increase their general hard work and quality of all their training. There must be no short cuts or excuses.</p> <p>Continue mastering effortless and easy acceleration of the boat together. Reinforce the idea that acceleration must be achieved together if the boat is going to feel light and fast. Athletes need to understand how applying pressure at different parts of the stroke will negatively affect boat run and feel.</p> <p>Allow the boat to move underneath the rowers. Don't upset the boat run and all the acceleration though limiting incorrect movements on the recovery. By now rowers should have a strong notation of steadily moving forward into the catch.</p> <p>Learn to stand on the foot-stretch, bend the blade and load-up at the catch. Don't upset the boat run and all the acceleration by throwing the weight towards the stern. Athletes skill of placement with hands lifting into the catch and the seat never stopping, but simply changing direction as the blade is placed needs to continue to be increased though listed technique exercises and video.</p> <p>During training paddles allow the boat to fully run between strokes especially while the boat is at its fastest point of the stroke, the release.</p>				
<p><b>Technique Skill Acquisition</b></p>	<ul style="list-style-type: none"> <li>• Blade acceleration should be mastered to the point that it is done in racing and paddling and in fact there is no difference between a racing stroke and a training stroke. The difference is simply in the time the athletes moves into the catch.</li> <li>• Athletes should be increasing their catch skill with catch technique exercises, e.g. dips, slap catches and pauses or strikes just before the blade is feathered.</li> <li>• Placement at the forward limit of an athlete's reach and missing no water and causing no splash.</li> <li>• Correct blade depth from catch to finish.</li> <li>• Perfect posture through increasing strength at the catch and finish.</li> </ul>				
<p><b>Training Program Information</b></p>	<table> <tr> <th data-bbox="448 1749 965 1794"><i>Distance</i></th><th data-bbox="965 1749 1444 1794"><i>Session Time</i></th></tr> <tr> <td data-bbox="448 1794 965 1946"> <p>1x – 14km to 16km 4x – 16km to 18km 2- – 14km to 16km 8+ – 16km to 20km</p> </td><td data-bbox="965 1794 1444 1946"> <p><b>Around 90 to 120 minutes</b></p> </td></tr> </table>	<i>Distance</i>	<i>Session Time</i>	<p>1x – 14km to 16km 4x – 16km to 18km 2- – 14km to 16km 8+ – 16km to 20km</p>	<p><b>Around 90 to 120 minutes</b></p>
<i>Distance</i>	<i>Session Time</i>				
<p>1x – 14km to 16km 4x – 16km to 18km 2- – 14km to 16km 8+ – 16km to 20km</p>	<p><b>Around 90 to 120 minutes</b></p>				

BOYS 1 <sup>ST</sup> VIII & JUNIOR SCULLING				
Sculling Rigging Measurements	1x	Oar Length 284cm – 286cm	In-Board 88cm - 90cm	Span 159cm - 160cm  Pitch 4 degrees
	2x	Oar Length 286cm – 288cm	In-Board 87cm - 89cm	Span 159cm - 160cm  Pitch 4 degrees
	4x	Oar Length 288cm	In-Board 87cm - 89cm	Span 156cm - 158cm  Pitch 4 degrees
BOYS 1 <sup>ST</sup> VIII & JUNIOR SWEEP				
Sweep Rigging Measurements	2-	Oar Length 370cm	In-Board 116cm	Span 86cm  Pitch 4 degrees
	4-	Oar Length 372cm	In-Board 115cm	Span 85cm  Pitch 4 degrees
	8+	Oar Length 372cm	In-Board 114cm	Span 84cm  Pitch 4 degrees



## WOMEN'S YOUTH & Under 21

### General Aims for Athlete Development

Coaches need to help athletes with their transition from school to club squads work through the challenges of managing training loads with work/job and university. Coaches need to think outside the square to achieve athlete goals on and off the water and ask what might seem impossible and unlikely but would make a big difference if we did it?

Athletes need to demonstrate increased commitment to vision and goals of their club squad. The values and ethics should be written and owned but the athletes and only facilitated by the coaches.

Coaches should always lead by example and demonstrate authentic and minimal confusions and politics and continuous coaching, listening and learning. This will lead to excellent teamwork, fine communication and relationships.

Athletes should be doing all rigging at training and regattas. Athletes should have been taught all rigging skills at school however club coaches should be helping fill in any gaps individuals might have.

As the coach my must create an environment where each athlete can achieve their goals. These goals might be different from one person in the squad to another. You must manipulate constraints and great vision for each athlete so they can training in a way that allows athletes to learn by themselves. This means you guide and shape rather than tell. Take the time to question for understanding and stand back and observe the athletes in training. Success will come from best practice:

- familiar drills,
- consistence in your manna and professionalism,
- stable practice environment,
- continued development of self regulated learners,
- variability and trial and error with on and off water training,
- accept slow improvements and

Don't always think there is something that other HP coaches are doing that you are not and relaise not all success looks pretty. Get athletes used to being uncomfortable remembering to comfort the troubled and trouble the comfortable.

### Technique Skill Acquisition

- Connection of power at entry with steady pressure allowing acceleration.
- Precision movement at catch and release with outside hand and inside hand working on different jobs during the stroke.
- Steady upper-body to brace and connect at the catch.
- Controlled and balances bodyweight and lateral pressures forward allowing time and efficient catch in a place-push motion.
- Connects speed of handle and leg drive speed to acceleration of handle.
- Speed of handle generated from launching off the front with legs, shoulders and arms together.
- Strong handle speed into the body, accelerates handle and boat.
- Strong body movement and posture at the finish with handle never deceleration.
- Let soft knees float up and boat move quietly underneath the rower.



		<ul style="list-style-type: none"><li>• Blade acceleration should be mastered to the point that it is done in racing and paddling.</li><li>• Placement at the forward limit of an athlete's reach and missing no water.</li><li>• Zero splash though accurate quick catch and correct blade depth.</li></ul>			
YOUTH & Under 21 SCULLING					
Sculling Rigging Measurements	1x	Oar Length 284cm – 286cm	In-Board 88cm - 90cm	Span 159cm - 160cm	Pitch 4 degrees
	2x	Oar Length 286cm – 288cm	In-Board 87cm - 89cm	Span 159cm - 160cm	Pitch 4 degrees
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YOUTH & Under 21 SCULLING					
Training Program Information	Distance			Session Time	
	1x – 16km to 20km 4x – 18km to 20km 2- – 16km to 20km 8+ – 16km to 22km			Around 90 to 120 minutes	

## Basic Principles Of The Rowing Stroke - (Sweep)

*The stroke cycle commences from the finish position.*

Part of the Rowing Stroke		The concept or what the coach should see.
Finish and Back Turn	The body posture should be relaxed (at least 10 degrees past the vertical), sitting tall but not bolt upright or wooden.	<p>The aim of this process is to maximise the effect of the drive phase by maintaining pressure on the face of the blade until the handle is tapped down with a flat outside hand and wrist, to ascribe a small c thereby exiting the water cleanly with the blade moving towards the bow.</p> <p>If the process is executed optimally, maximum gain from the drive phase will be achieved, with minimal adverse effect on the boat's movement.</p>
	Thighs squeezed down and toes pointed to enhance stability and correct pelvic tilt.	
	This stable position is maintained as the back turn process is executed.	
	The speed of this movement is commensurate with the speed of the handle at the end of the drive phase (speed in speed out).	
Finish	The body remains stable until the point at which the handle is approaching the knees.	<p>Importantly this finish and back turn sequence establishes a stroke cycle rhythm which is supported by the science.</p> <p>The rhythm must be maintained whether rowing at training speed (rate 20) or racing (rate 35).</p>
	Pivoting at the hips, the hands lead the shoulders in the movement towards the stern (independent movement of the hands).	
	The body must move through the vertical in the recovery before the seat commences the movement towards the stern.	
Recovery	The knees are pressed down until the hands pass them. The body continues to swing over towards the stern until a point over the lower shins (set position).	<p>From the coaching boat, the slide speed throughout the recovery should appear to be constant. In reality it isn't but it must not appear to either decelerate or accelerate as the rower approaches the furthest point forward on the slide.</p>
	From there through to the placement, (catch) the body position remains constant.	
	If the rower is correctly rigged, the hands should travel in a flat line throughout the first two thirds of the recovery at a height consistent with the blade/s being at least a blade width above the water.	
Placement	As the seat approaches the last, approximately, 13cm or so in the movement forward, commence the upward movement of the handle while it is still moving towards the stern.	<p>The concept being that the handle will ascribe a C and if done correctly, the blade will enter the water with very little change of direction in the air. In other words a very direct entry at the furthest point forward in the recovery (entries in the recovery).</p> <p>A perfect execution of this process that is, the timing and quickness of the upward movement of the handle and the subsequent coverage of the blade, will have a profound effect on the efficiency of the drive phase.</p>
	The placement requires very little energy expenditure to effect the entry and in the small boats in particular, the emphasis should be on the work being in the water not into the water (quick and quiet).	
Drive Phase	The drive sequence (legs body arms) varies with the boat class and desired shape of the force curve, but must always be place push. Thus the leg drive body open sequence occurs much closer together in an eight than a scull.	<p>As a ready reference, when the oar shaft is at right angles to the centre line of the boat in the drive phase, the body must have opened just past the vertical.</p> <p>It must be stressed that throughout the whole stroke cycle relaxation is most important for physiological and skill reasons.</p>
	The outside arm in particular, should remain relatively straight until the hands approach the knees.	
	The hands must follow a flat line in the drive phase in order to achieve a tight not washy puddle.	

## Queensland Technique Explanation

This is an explanation of the rowing stroke. It uses the common language and phrases Rowing Queensland encourages coaches to use. It begins at the finish or release of the stroke.

The body at the finish should have good posture however it shouldn't be stiff or wooden. A rower's body needs to be stable while the hands effect the back turn. Hand speed in – should match hand speed out with continuity of movement. The exit must be effected by hands tapping down and handle rolling in the hands. The wrists shouldn't roll over to feather the blade. The blade must have pressure and acceleration on it all the way to the finish but this means not bringing the hands all the way to the body as the hands need to begin the tape out before the body so the handle does not get drawn to the lap or the blade not rolled out of the water. Body remains stable while the back turn is being effected and hands pass the hips heading towards the knees. The quads are squeezed down (*not locked out*) and toes point to aid stability of the body.

Hands approach the knees before the body breaks or the shoulders move. As soon as the hands are passed the knees the knees can start to break. Once the hands are over the shins the body should be in the set position. The body then stays in the rocked over position while the seat moves to the heels and blade is placed.

Flat lines with the hands, shoulders and head should be constant along with slide speed all the way to the placement. As you approach the placement the body should be relaxed ready for a smooth transition. The shins should be vertical for the quickest time possible. To achieve perfect placement with speed and timing the handle must rise up as the athlete approaches the catch. Get the blade in very directly and miss very little water. Place the blade at the furthers point of the recovery or furthers point forward. Move the hands up as the seat is still rolling forward effecting a "place push" sequence. Very little effort is needed in the placement so effect the placement with very little energy expenditure. The aim is for the blade not to change direction significantly in the air. Direction change should be at the point of placement at the very latest point of the rower still moving forward.

**Effort should be applied in the water not into the water.** Sequence after the placement should be flat lines and accelerating leg speed where arms are simply a connection between handle and feet. Don't break the arms until the hands are past the knees. When the blades are at 90 degrees to the boat the body should be moving through the vertical position. Once the blade releases the water, hands should be relaxed and fluid. There should be no weight on the hands or any part of the body on the recovery.

### Full Reach

- Tall, relaxed and braced trunk position, arms and wrists are straight and relaxed.
- Shoulders are extended with nose over toes.
- Blade is squared and ready to be placed in the water.
- Hands are prepared to rise in an independent movement from the body to place the blade in the water.
- Shins vertical, knees shoulder width apart, pressure is felt through the balls of the feet.
- Seat is stable preparing for the drive phase.
- *Prepare to place the blade at optimum length.*



### The Catch

- While the seat is moving into the catch, allow the blade to get close to the water.
- The hands move quickly up placing the blade with limited splash.
- The body is compressed, with seat close to the heels, shins vertical and chest preset to the thighs.
- The seat is never still but simply changes direction. As soon as the seat changes direction the body braces and makes connections through the feet, hips, back, shoulders, hands and blade.

Exercise	Explanation	Aim
Slap Catches	Crews should be able to do this without slowing down too much. There should be only one slap not 4 or 8.	As in dips the aim is to improve timing at the catch. Once again emphasise sharpness and effectiveness not speed.
Inside Arm	A sweep exercise, this is done with only the inside hand on the blade. Outside hand on the hip.	This is to fix crews' catches by focusing on their inside hand which is the hand that places the blade.
Dips	Crews slow rate and pressure to U3. The blade is dipped into the water at the catch, pulled out and placed back in, to take the stroke.	The aim is to improve timing at the catch. Emphasise sharpness and effectiveness not speed.

### Early Drive

- Legs are the first body part that moves to change the seats direction.
- Body must stay at the same angle. Shoulders must not be thrown towards the bow.
- Body begins to separate from legs as legs drive.
- Hands, shoulders and head must only move horizontally, there must be no vertical movements.
- An effective connection between foot-stretcher seat, hips, back arms and handle will see a slight separation of seat and bum.

Exercise	Explanation	Aim
half slide at the catch	This is a hard exercise and should only be done in 2s, 4s or 6s. It is to over work the catch movement.	Rowers must not have any draw through with the arms or body. There can be a small break in the arms to help with the back turn, the legs are the only things that can be fully used.
fast down the slide, slow through the water	Rowers should take both pressure and rate down to dead light. The speed of the back turn and the catch is then increased with no pressure through the water.	This should only be done as a last resort to help crews gain a better catch excursion. Rushing down the slide is not recommended in any other case.
soft catch, strong finish	Crews row with 20 to 30% catches through to 50 to 70% finishes.	The idea is the soft catches give time to effectively execute the catch and build through to the finish (the correct movement).
bodies over	From the catch use legs only with some arm movement to help handle around the back turn. Body must stay in the catch position throughout the exercise. Slow boat speed right down and do with half crew to start with.	This exercise has two aims. One is to correct the body angle at the catch and leg drive. The second is to get a strong rock-over at the end of the stroke.

### Mid Drive

- Handle, shoulders and head must continue with only vertical movements.
- Legs continue to accelerate handle speed.
- The body does not start moving yet, it needs to stay at the same catch angle.
- There is a steadiness that needs to be applied at this time so blade continues at the correct depth and allows acceleration.
- Arms stay straight.

### Late Drive

- The back and shoulders begin to move towards the bow.
- Legs finish their accelerated drive.
- Shoulders should be moving through the seat and at this point arms begin to break.
- Acceleration continues to increase.

Exercise	Explanation	Aim
outside arm	A sweep exercise this is done by placing the inside hand down the shaft of the blade.	This exercise works by isolating the outside hand which is the one that controls the blade around the back turn.
outside arm, Inside leg	This is best done with half the crew rowing as it's a difficult exercise. Rowers will row with outside arm only. Their outside foot should be out of the foot stretcher.	The aim of this exercise is to get a diagonal line across the body from the inside leg to outside arm.

### Finish

- The body is 2 degrees through the vertical point.
- Shoulders touch at the back which opens chest.
- Arms finish handle acceleration.
- Handle remains in the same horizontal plan as through the entire accelerated drive.

### Release

- Hands move into and around the back turn.
- Wrists remain flat as hands tap blade out of the water.
- Body is supported through the core to allow shoulders and body to remain still as hands move handle around the back turn.
- Hands move into the body, around the back turn and then away from the body at the same speed.
- Inside hand on a sweep blade turn the handle to feather the blade.
- Sculling handle is feathered in the fingers not in the handle. Athletes need to have appropriate handle size to allow this.



Exercise	Explanation	Aim
feet out	Crew rows with feet out of shoes or clogs.	Feet out makes it difficult around the back turn. It aims to speed up the transfer of weight from one direction to the other around the back turn.
one hard, one light	One hard stroke (full pressure), one light (dead light), over and over.	The aim is to have the same steady technique when rowing hard and light.

#### Early Recovery

- Hands move away from the body at the same speed they came into the body.
- Once the arms are straight the body needs to rock over.
- The back rocks from the hips remaining straight.
- Knees start to break as hands are over the shins.

#### Mid Recovery

- Knees continue to rise softly.
- Hands remain on the same horizontal plan as they move towards the catch.
- Athletes allow the boat to move under them. They do not want to drag themselves forward through the foot-stretcher. The boat must be allowed to run between strokes.

Exercise	Explanation	Aim
double recover	The recommended way is to have an "air stroke" in between every 3 or 4 strokes through the water.	This can be adapted in many different ways. The aim is to help the balance and hand heights.
3 strike recovery	A strike is held at 3 points during the recovery. Once at the usual position, second at half slides. The final at the hand check position.	Execute this as an extreme balance exercise. And as a steadiness and control exercise.
hand checks	This is a strike-like pause just before the blade is squared to go in at the catch.	The aim of the exercise is to improve timing and placement at the catch.

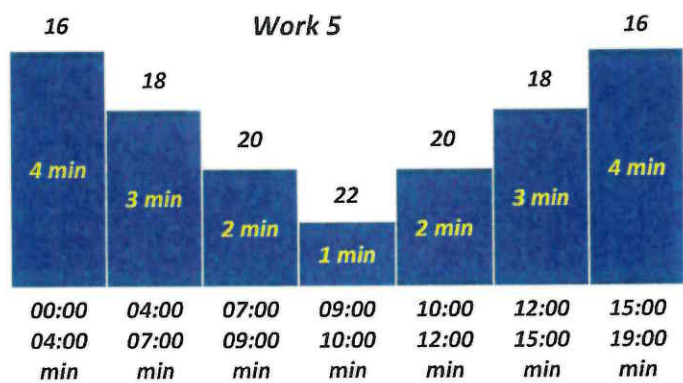
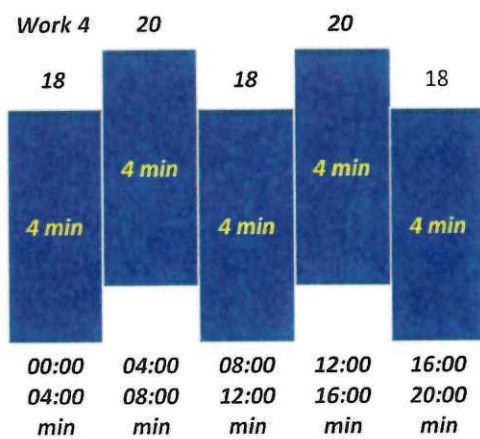
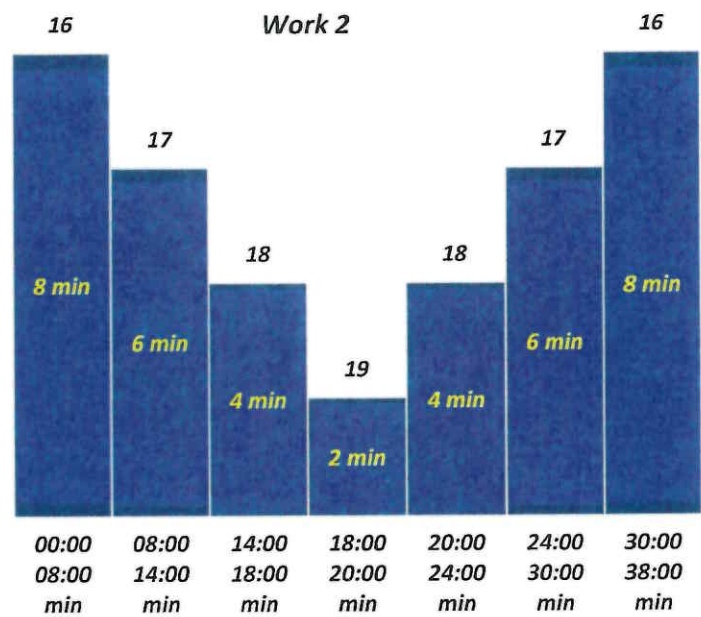
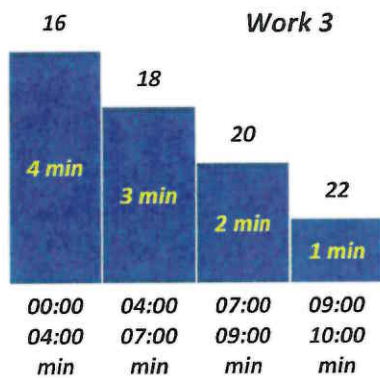
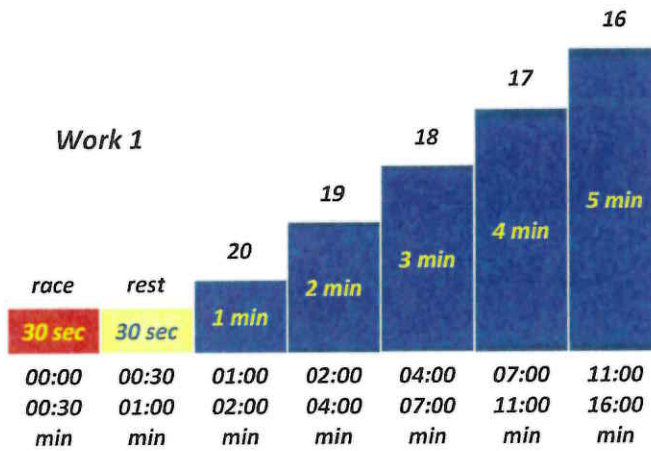
#### Late Recovery

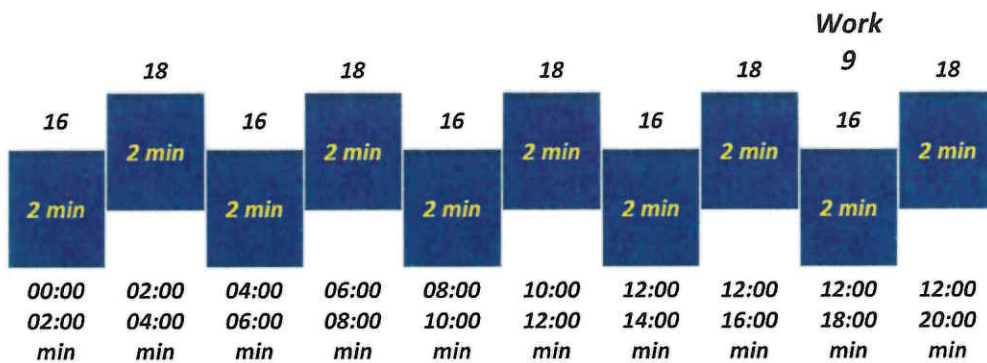
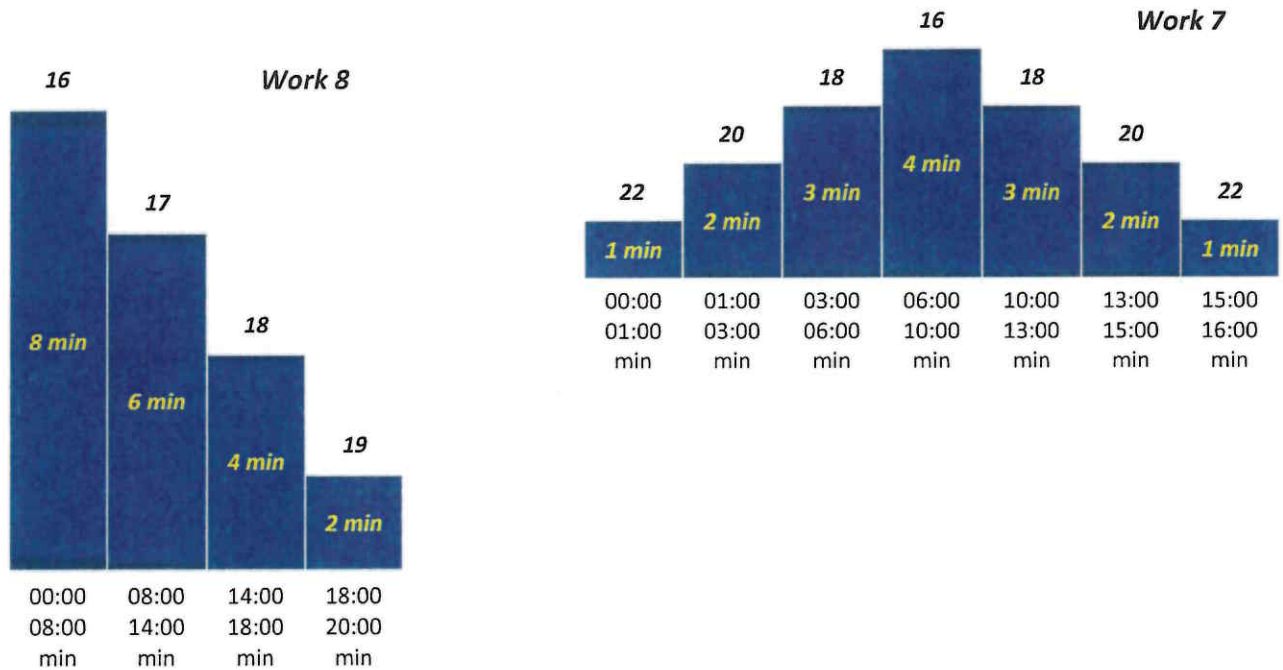
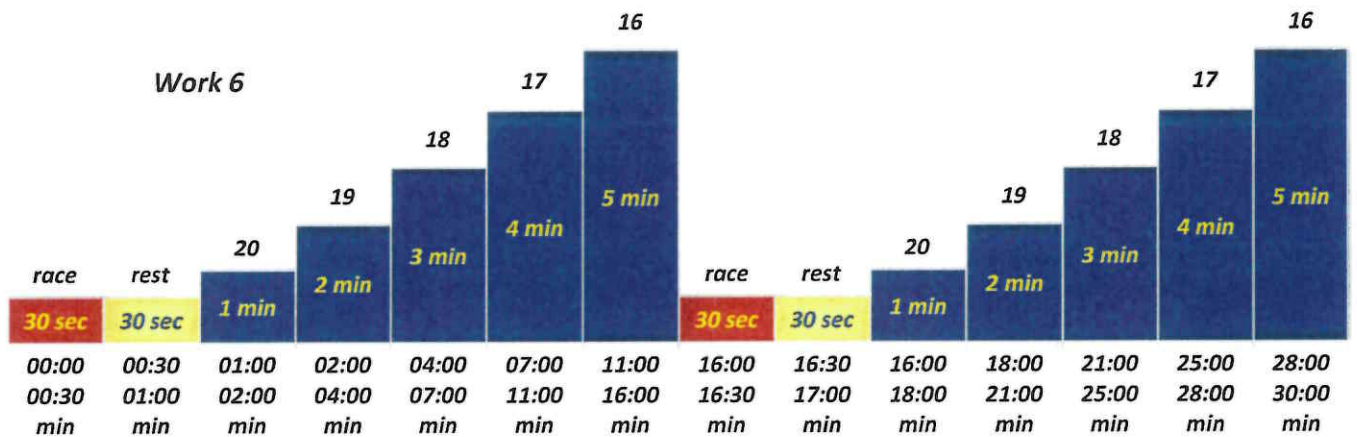
- Athlete must move softly into the catch.
- Body must stay at the same angle and athletes must not reach out for more length.
- Hands move the handle up into catch position.
- Head and shoulders stay on the same horizontal plan.
- The shoulders do not help the blade enter the water.
- The blade must enter the water as the seat is changing direction.



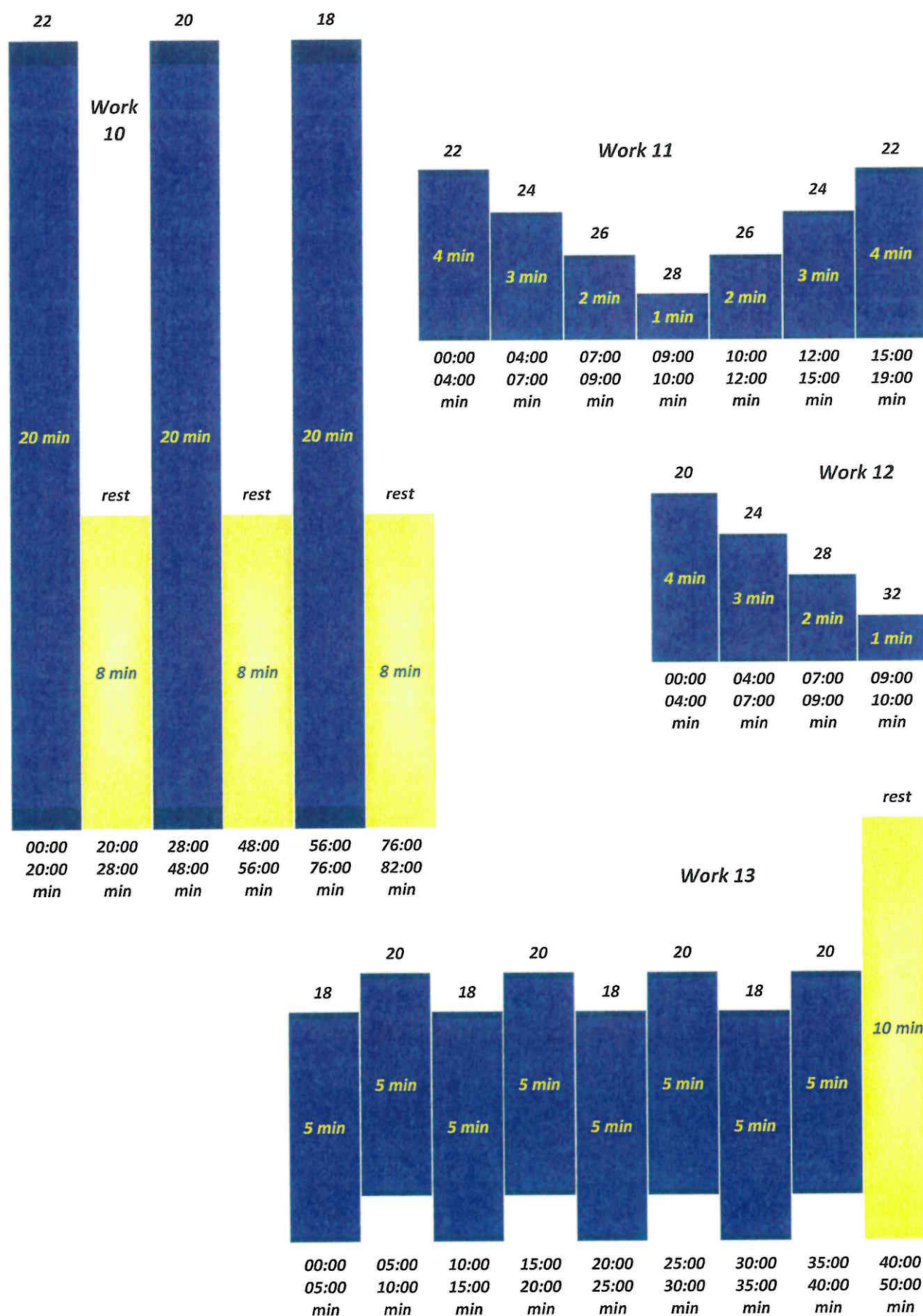
Exercise	Explanation	Aim
square blades	The crew does not feather on the recovery.	This can be done to help the balance due to the fact that the blades are all traveling at the one height, and there is not as much clearance from blade to water.
roll – ups	Crew sits at the finish with the blades in the water. On the cox or coach's call they go over the recovery and in at the catch (without taking the stroke).	This is to help timing around the back and on the recovery and hand heights on the recovery.
strikes	This can be done at any time on the recovery. Most common time is after the recovery just before the knees break.	This can be done as a steadying exercise if the crew is rushing forward (a common mistake for school crews). It can also be used as a balance exercise.
50 / 50	This exercise is not so much a technique exercise but a different way of thinking. Rowers divide the recovery into two sections (50% - 50%). The first 50% of the recovery is spinning the hands and moving forward. The second 50% is pulling the boat back to them rather than pulling themselves forward.	The aim of the exercise is for rowers not to fall over themselves or dive into the catch.

Exercise	Explanation	Aim
strike break down	This is the same as doing a normal strike but breaking it down into sections. E.g. do the first half of the recovery, full recovery, full recovery first half of drive, etc.	Breaking the rowing stroke into sections and focussing on that area gives the rower the chance to get that section right before moving onto the next part of the stroke.
shorting of the slides	This gets done from $\frac{3}{4}$ , $\frac{1}{2}$ , $\frac{1}{4}$ , then to body rock and arms only. The better the crew the shorter they will be able to go during the stroke.	Shortening can be done as a sharpening exercise or it can be done as a back turn exercise. Adds the back turn due to the crew doing it over and over quickly.
one person rowing	Just have one person rowing. This means a 2- may end up rowing around in circles.	This aims to give a stable platform for the rower to have time to make technique changes.
eyes closed	All members of the crew shut their eyes.	Eyes closed aims to coordinate the crew feel the rhythm and balance without relying on their eyes.

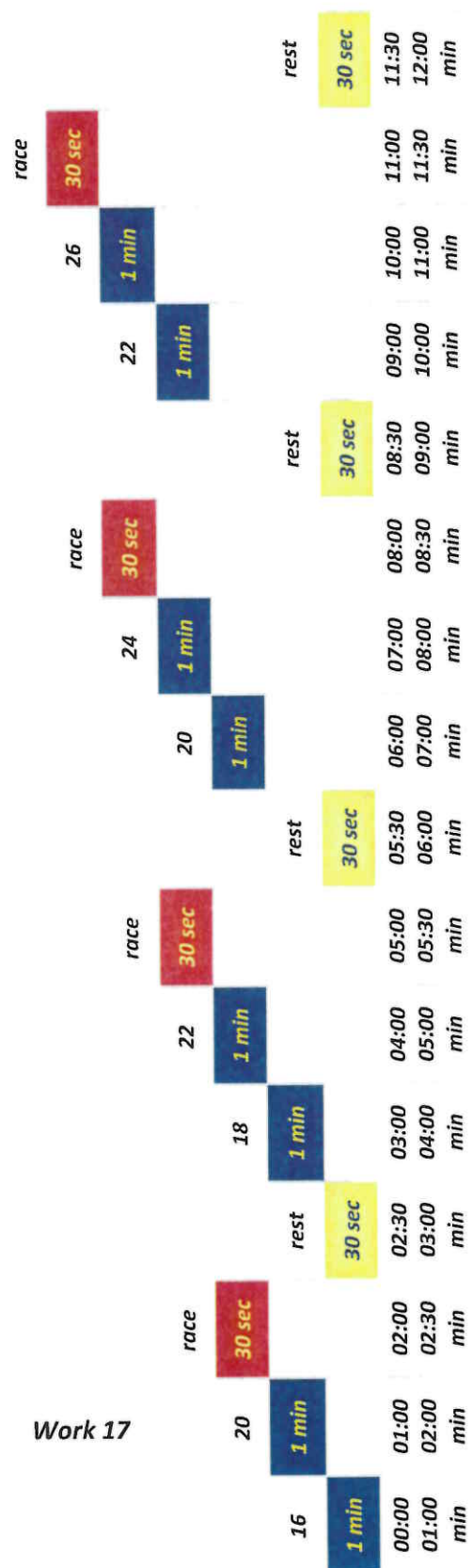
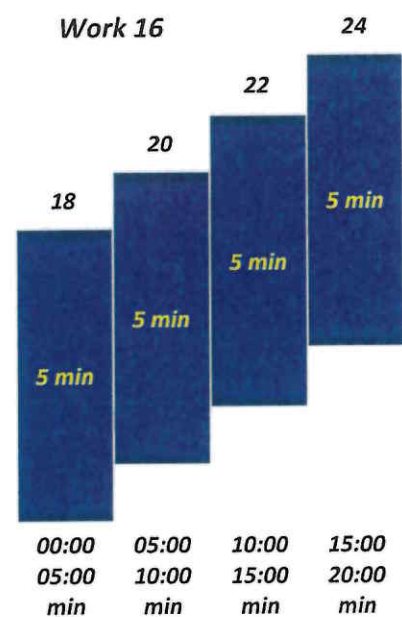
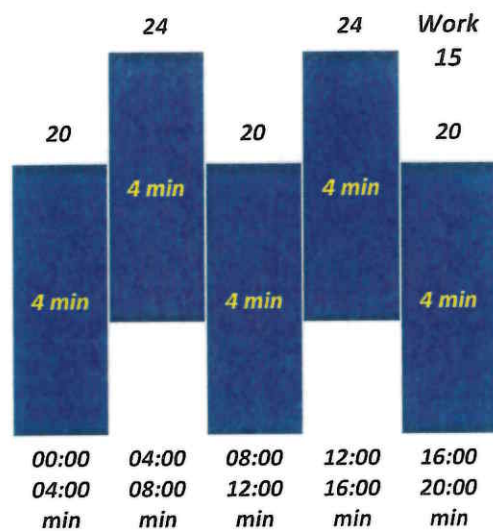
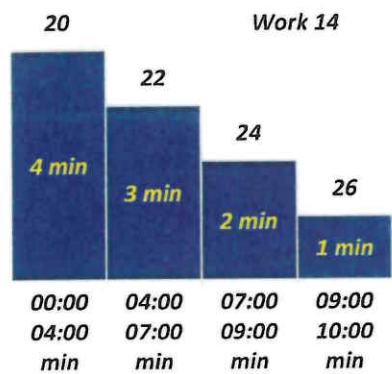


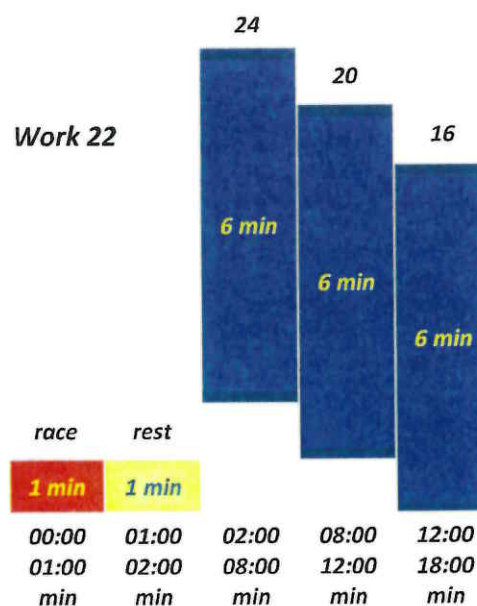
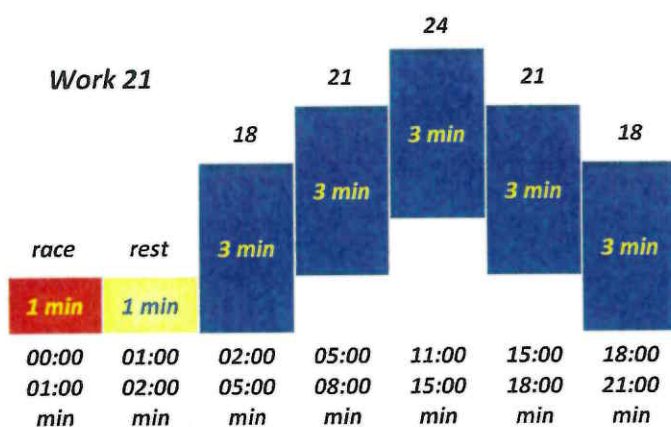
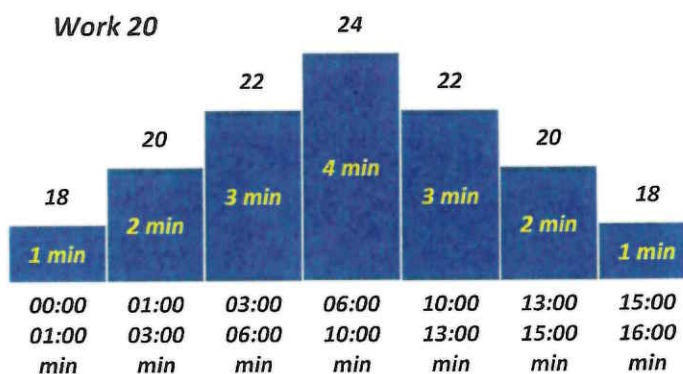
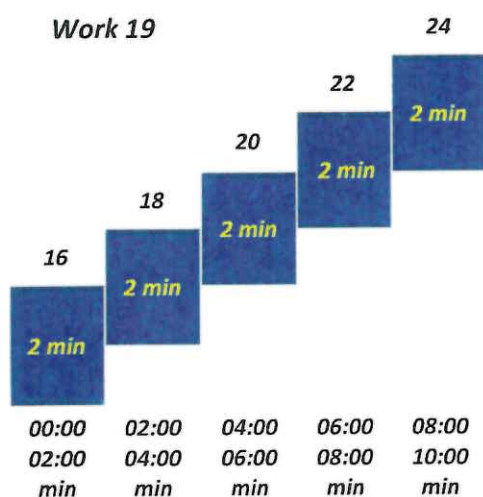
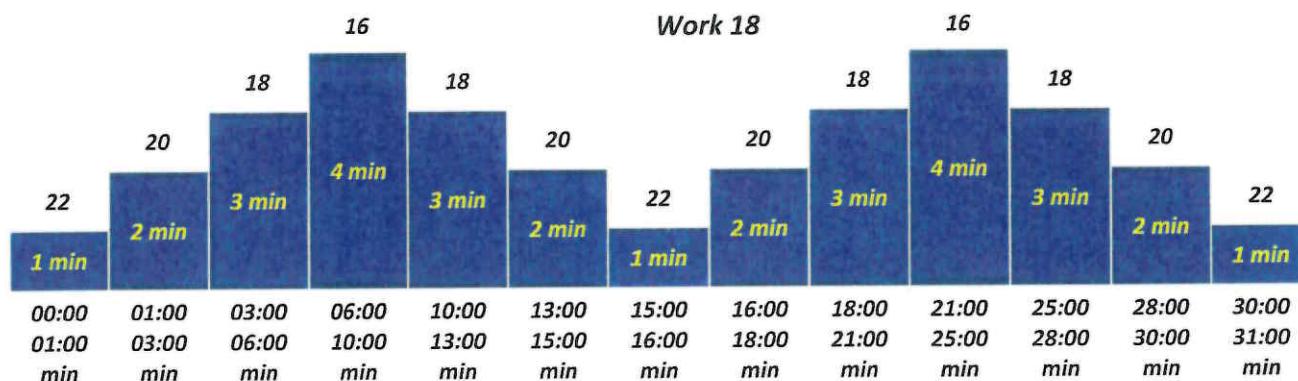




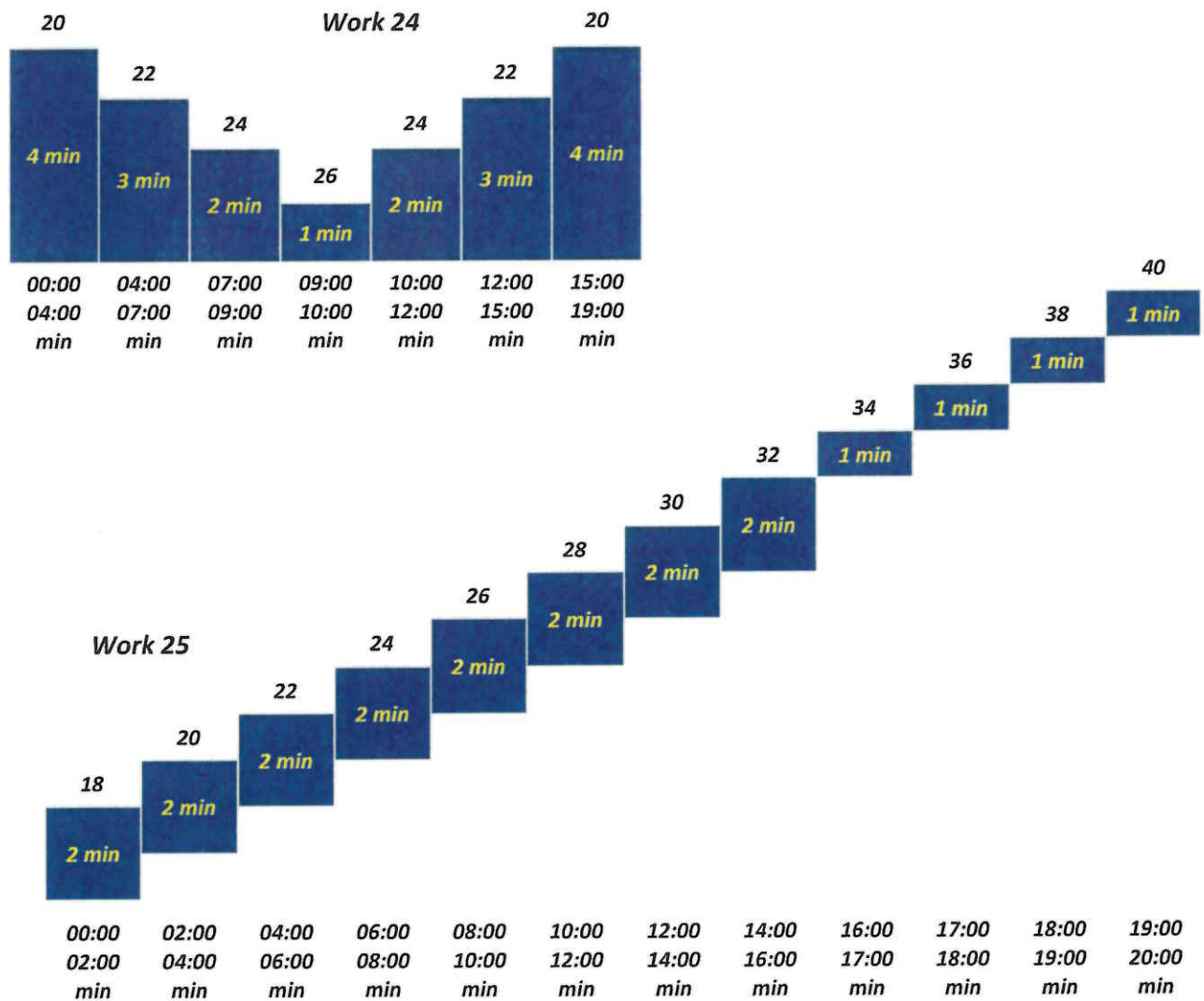
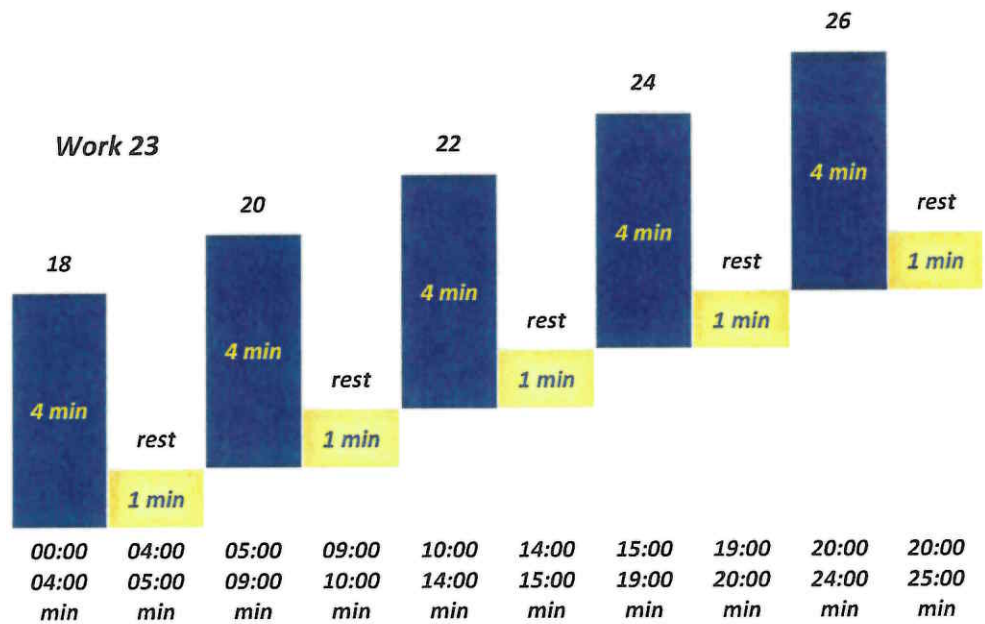


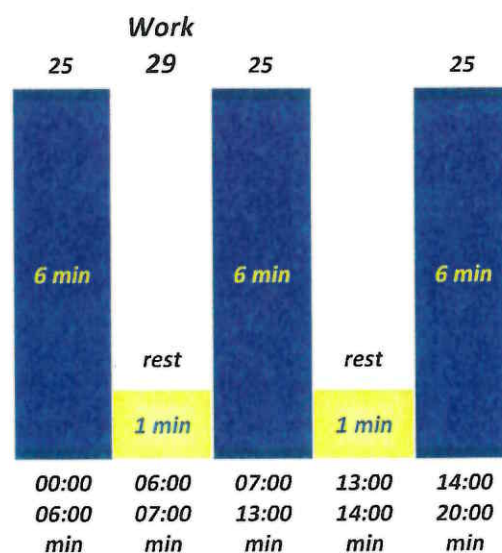
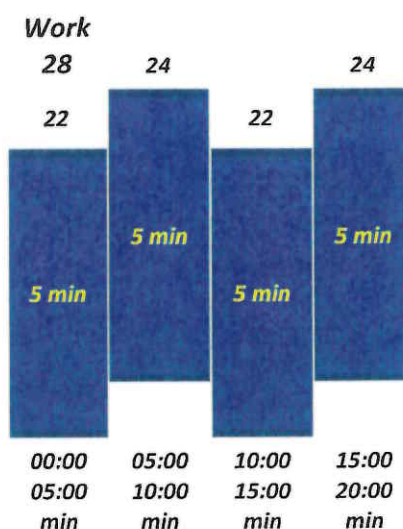
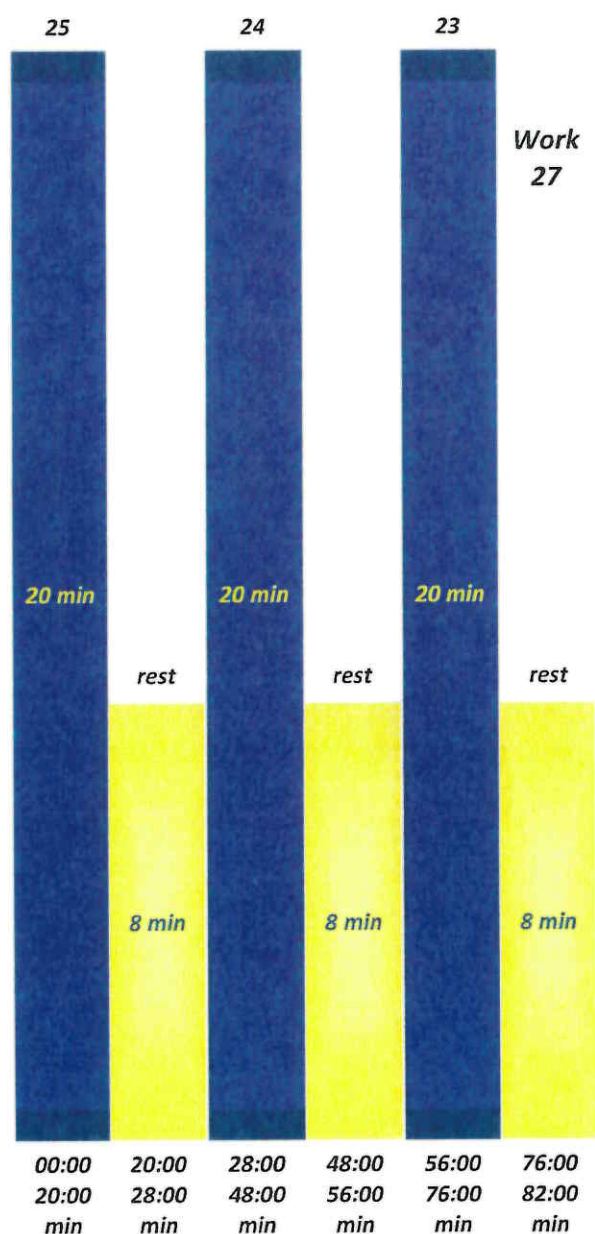
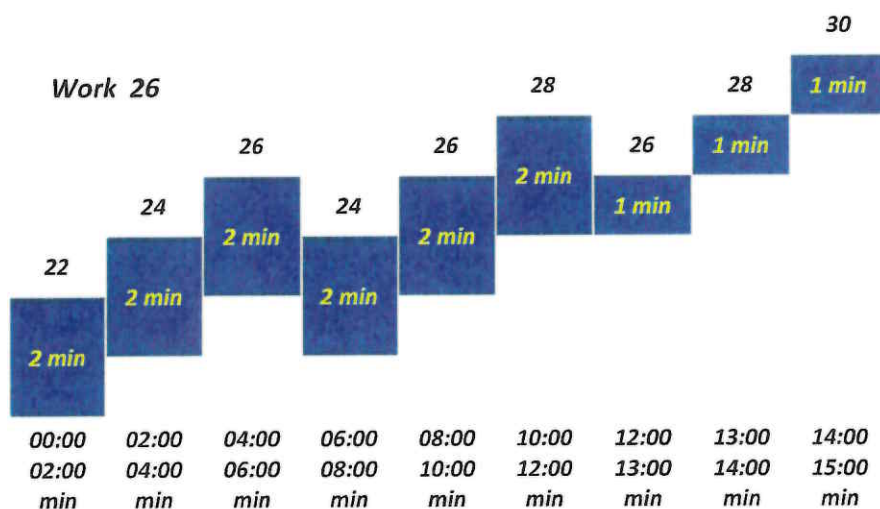
At the end of every 5 minutes do 10 power strokes.

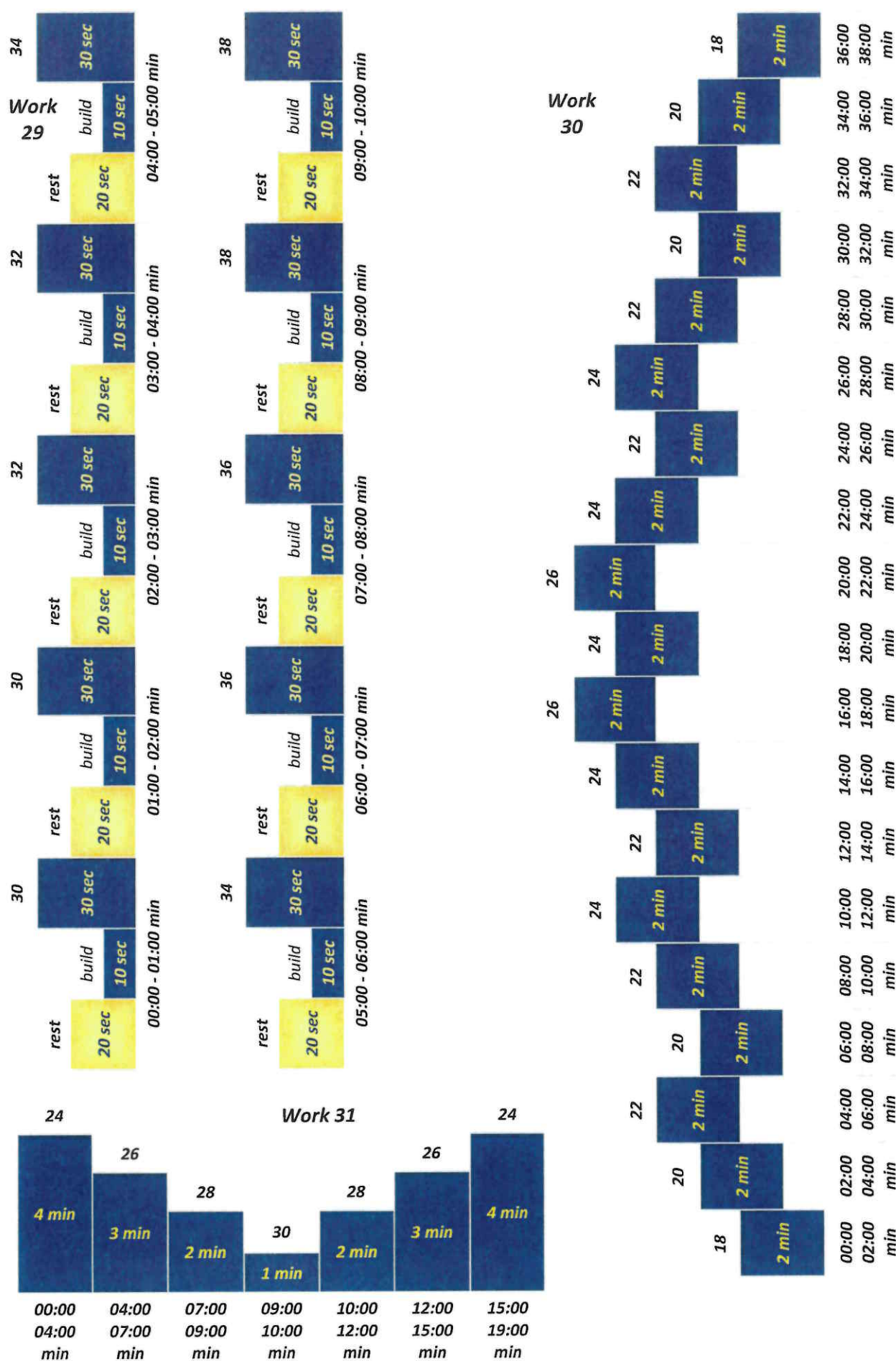






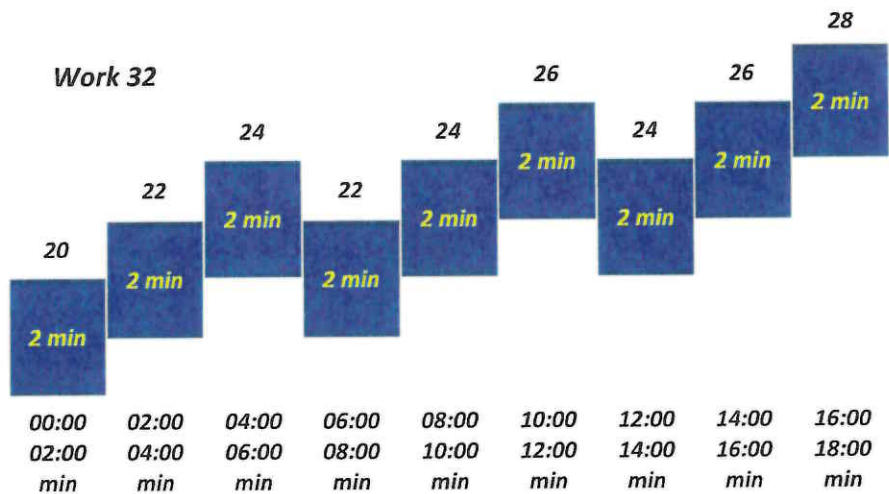




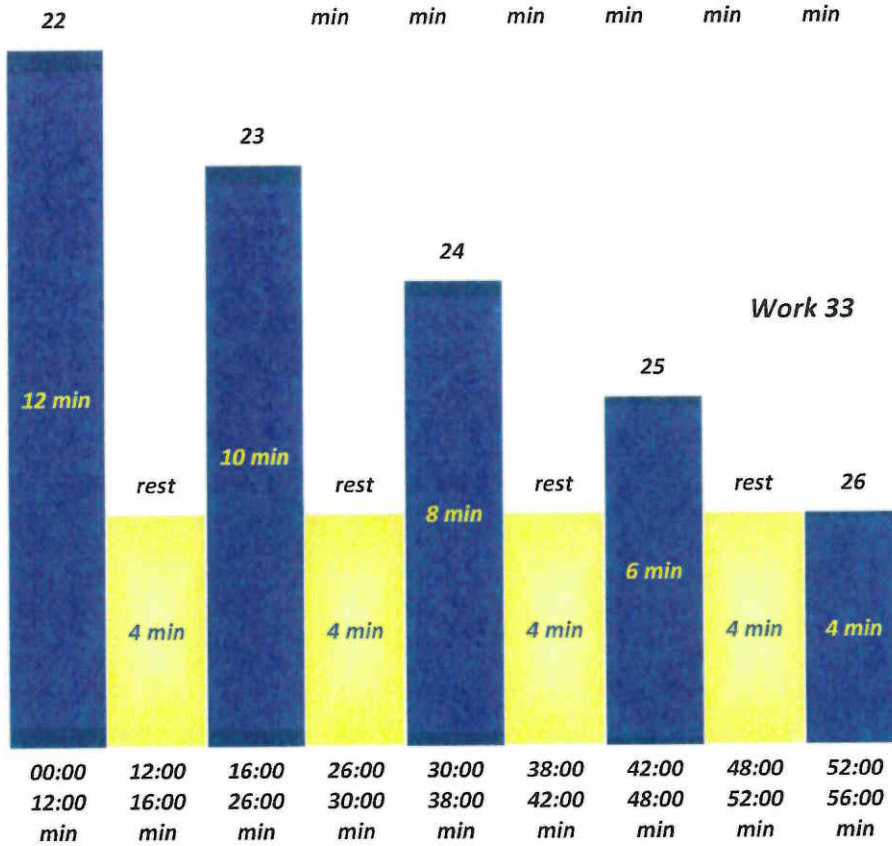




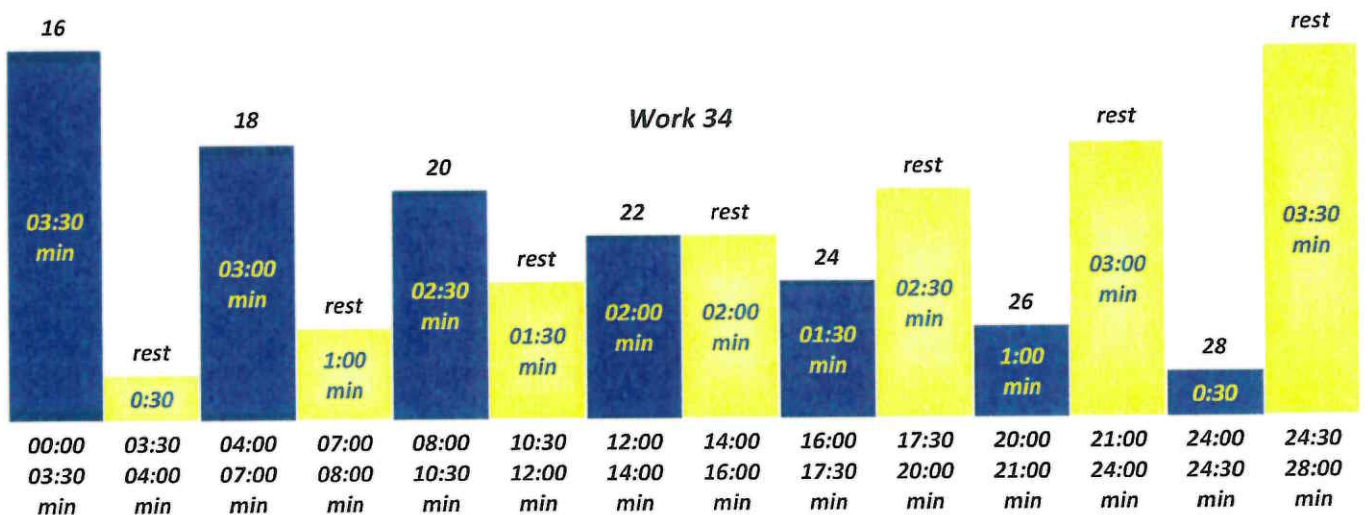
Work 32

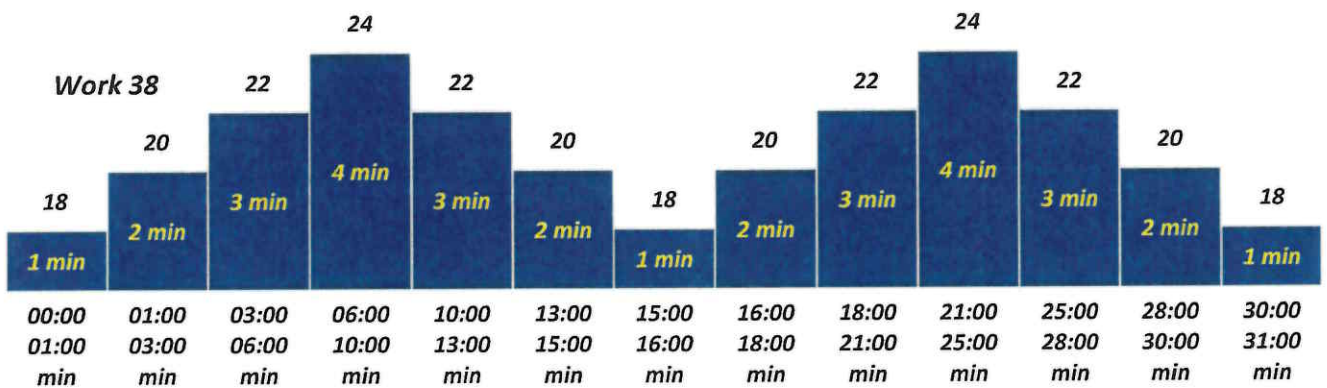
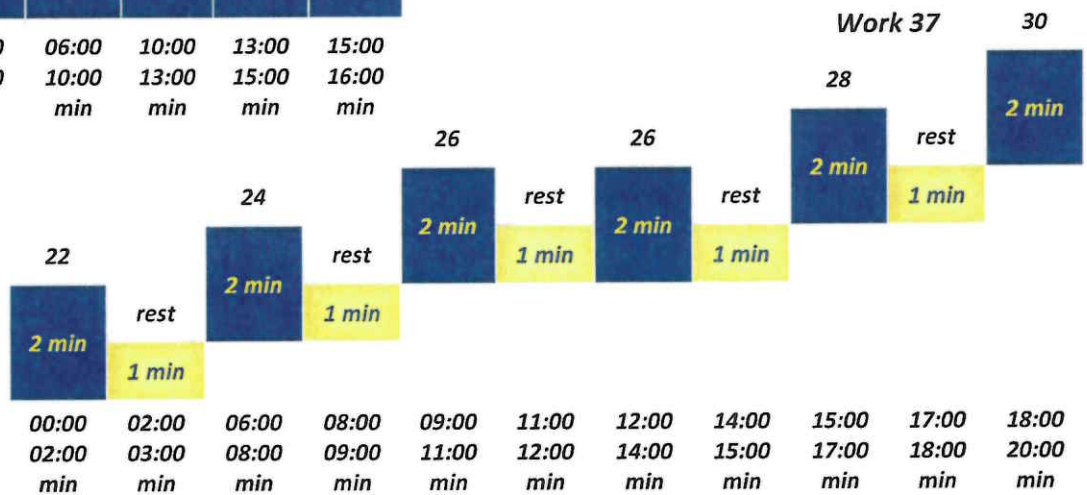
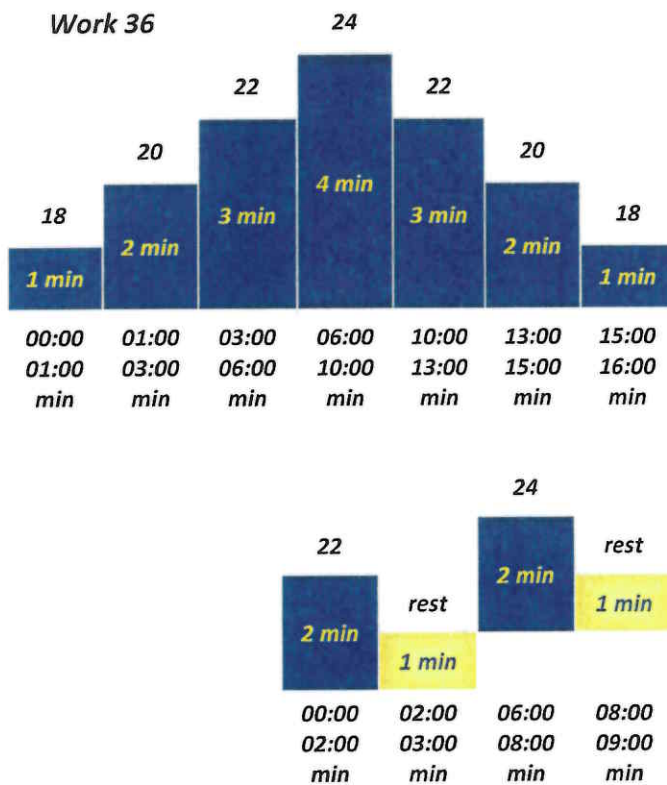
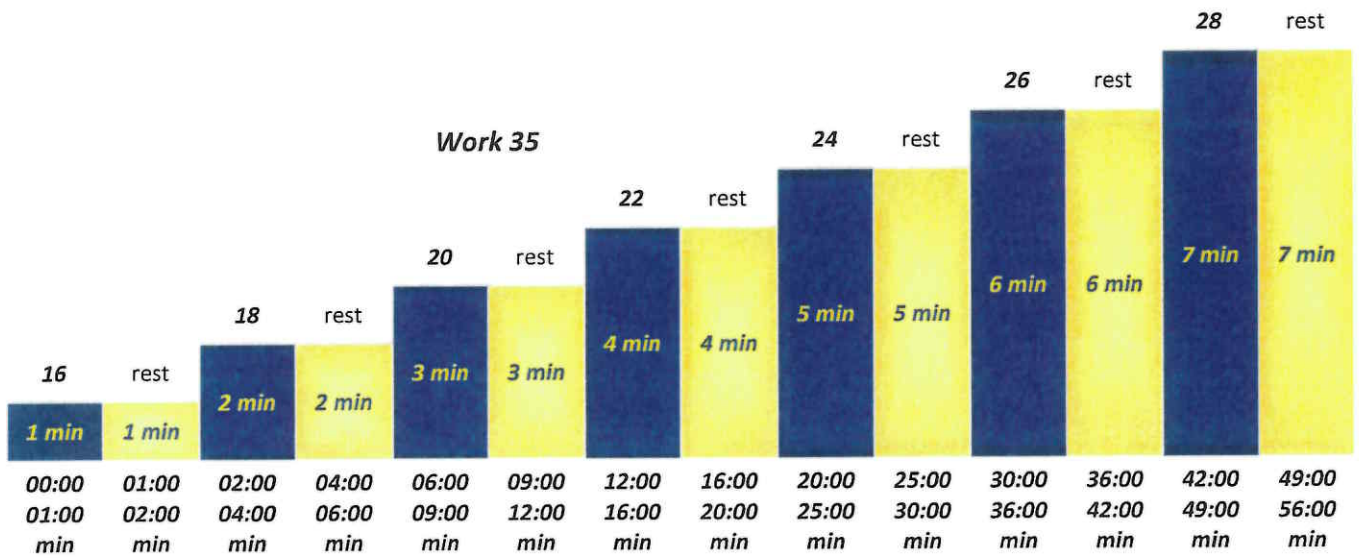


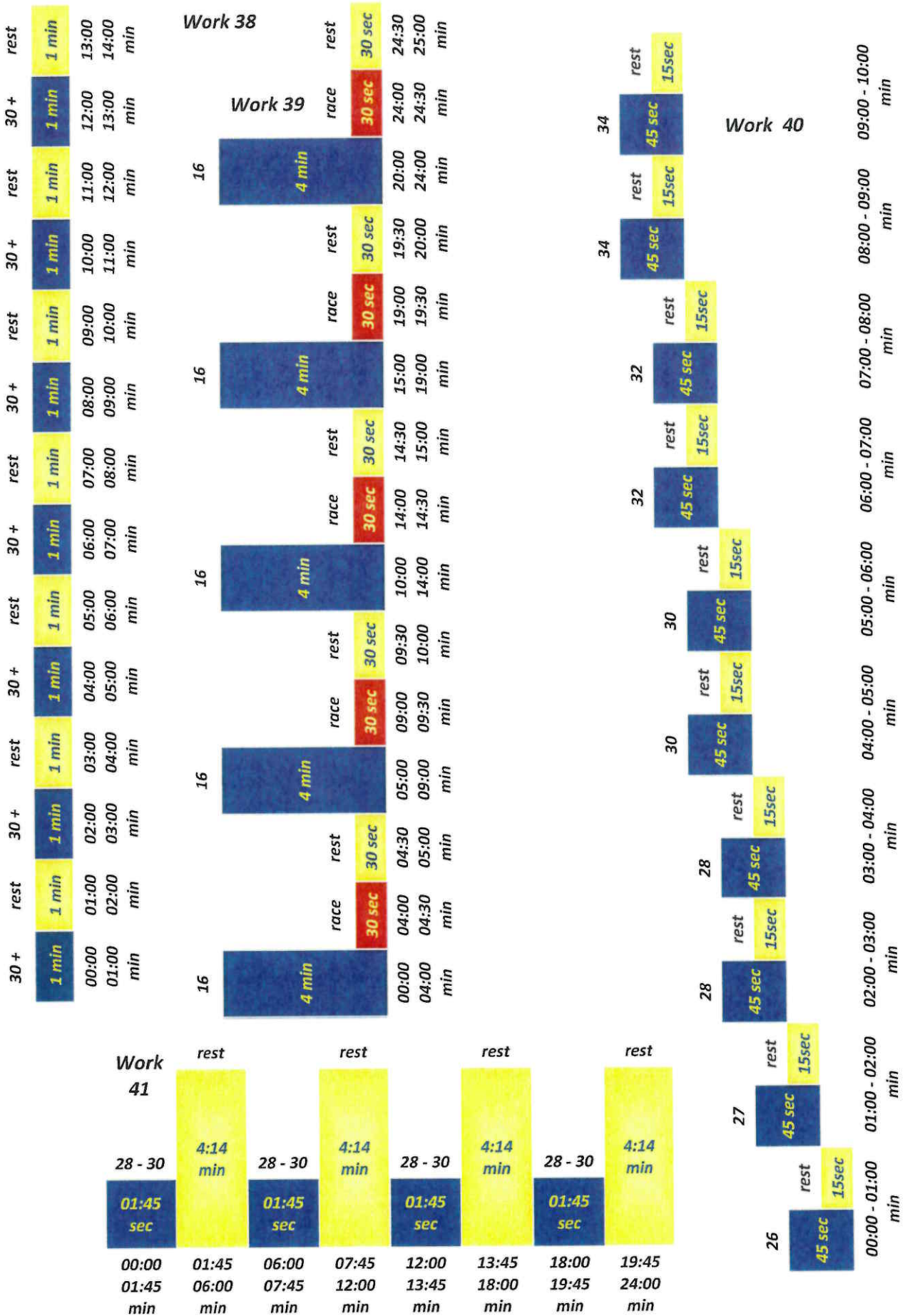
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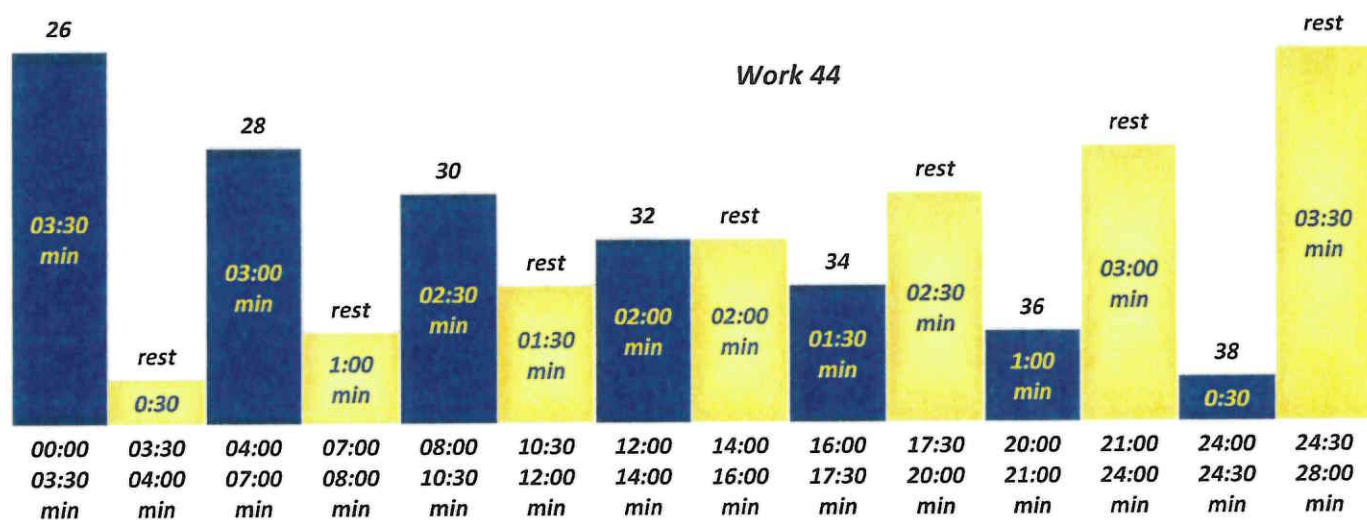
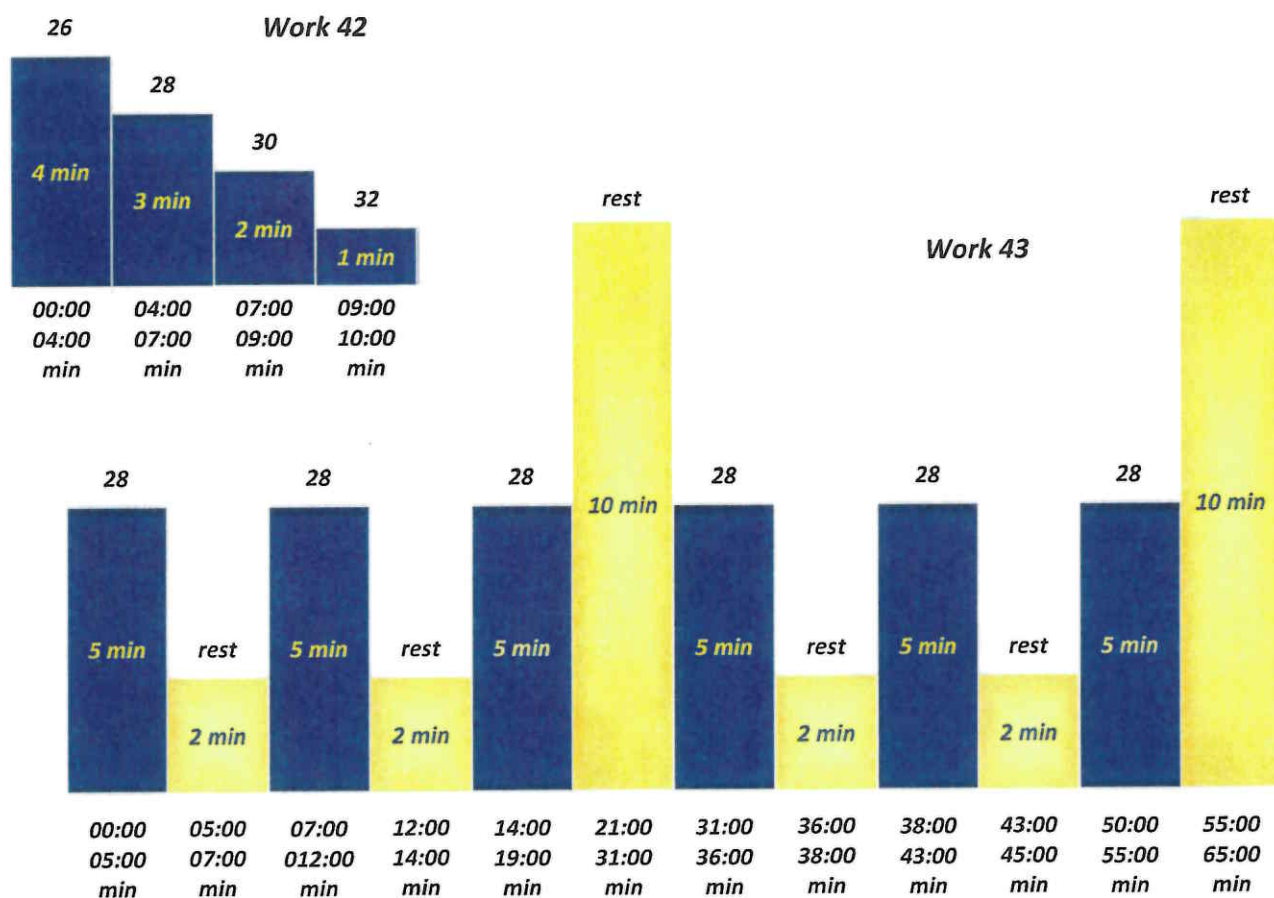
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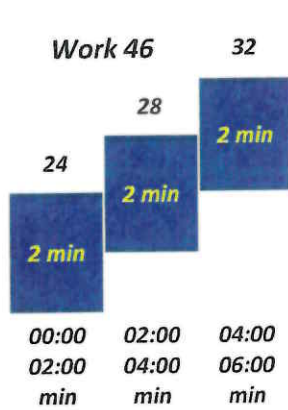




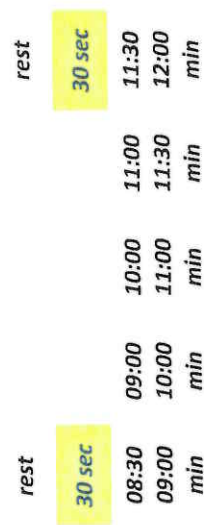
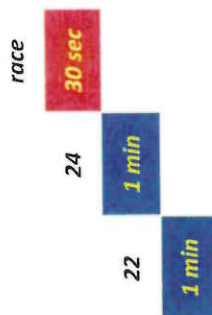




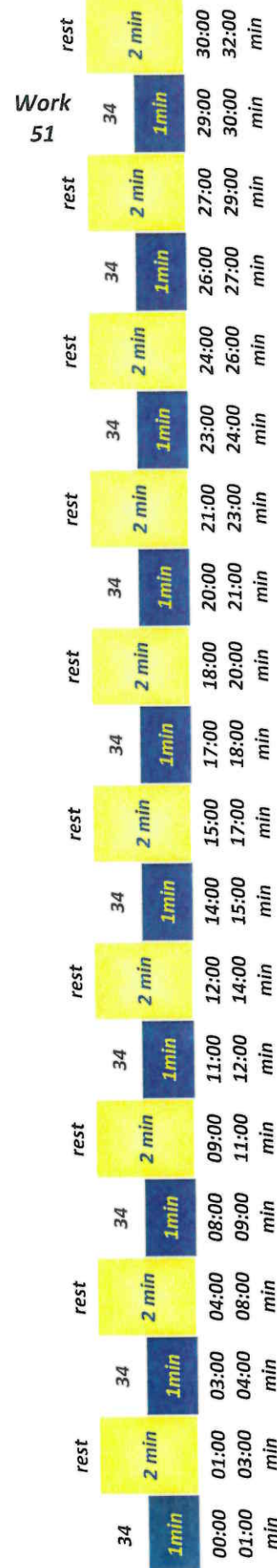




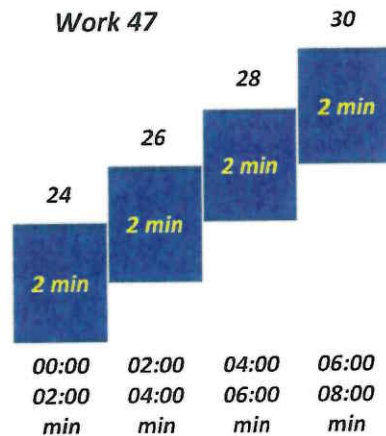
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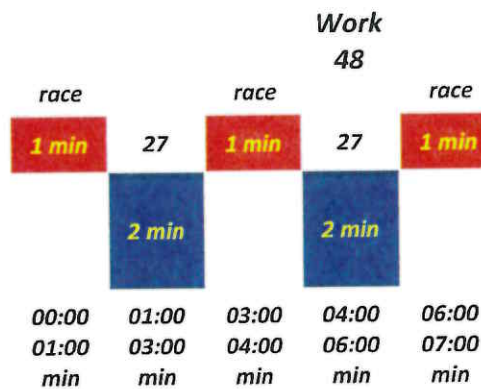
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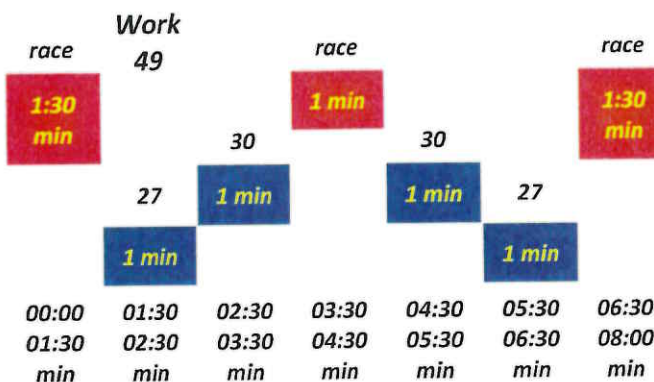
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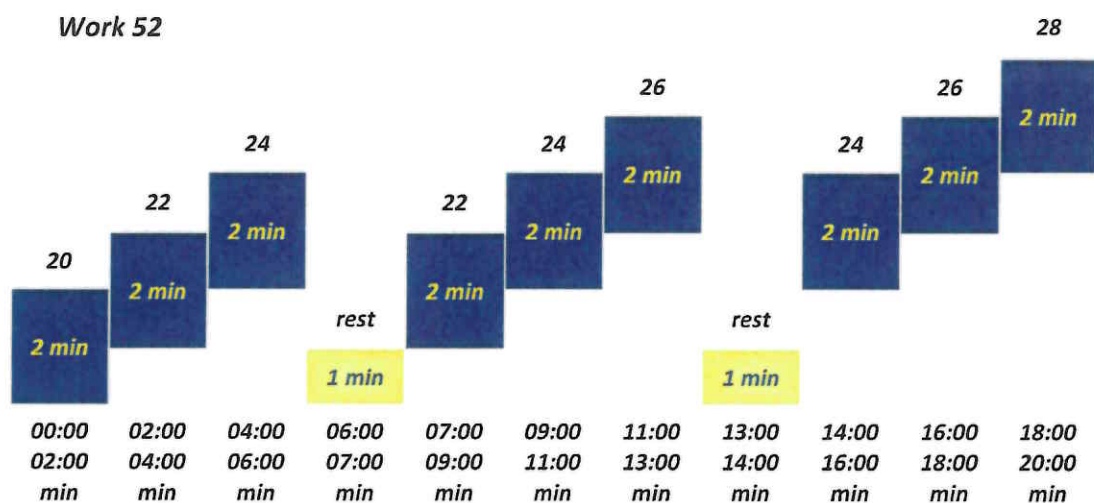
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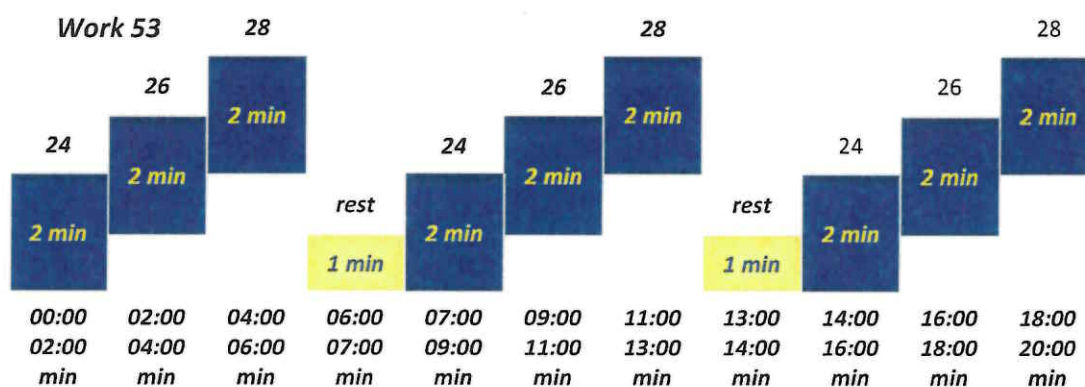
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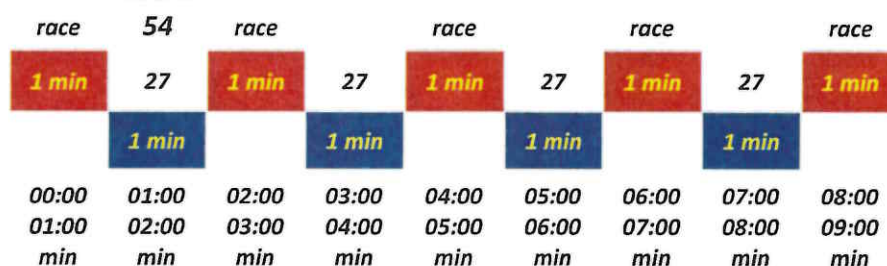
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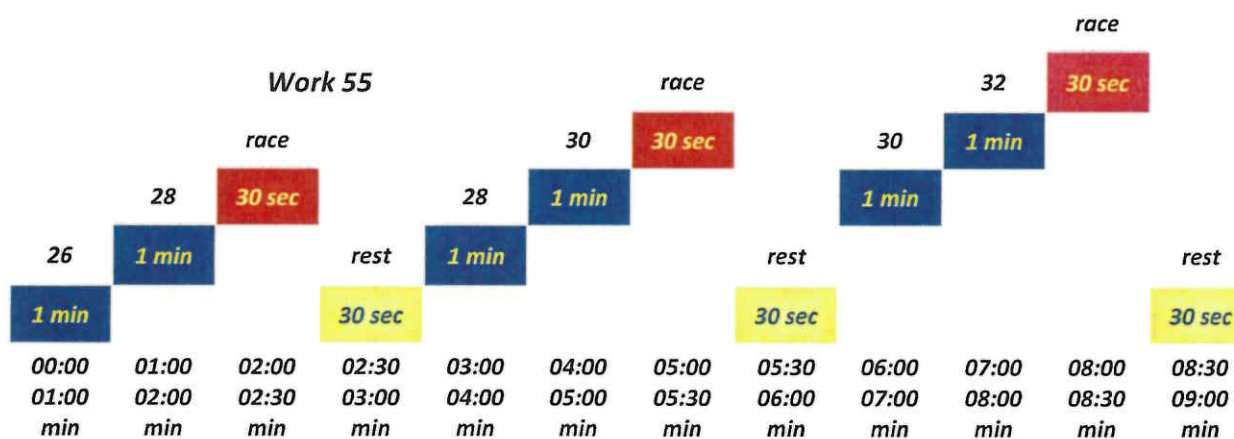
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### Work 54



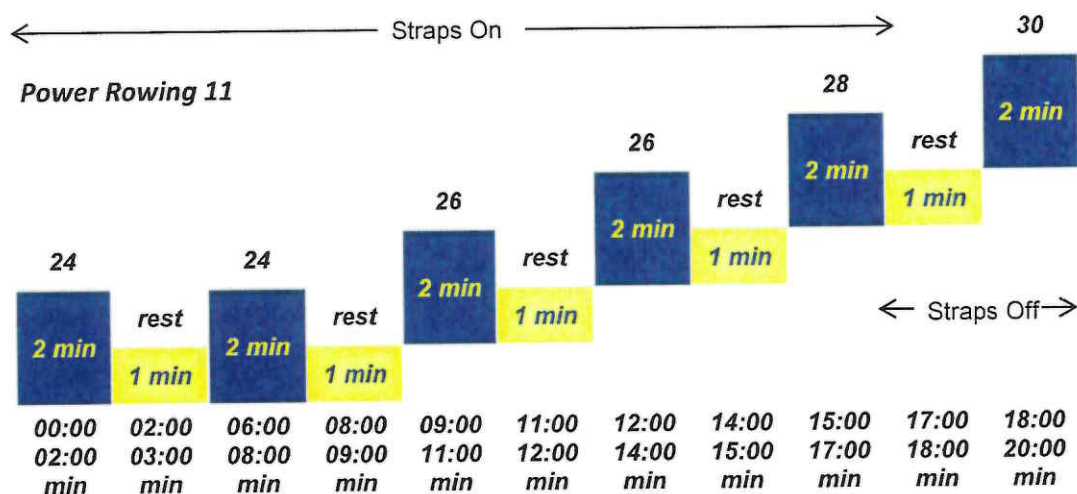
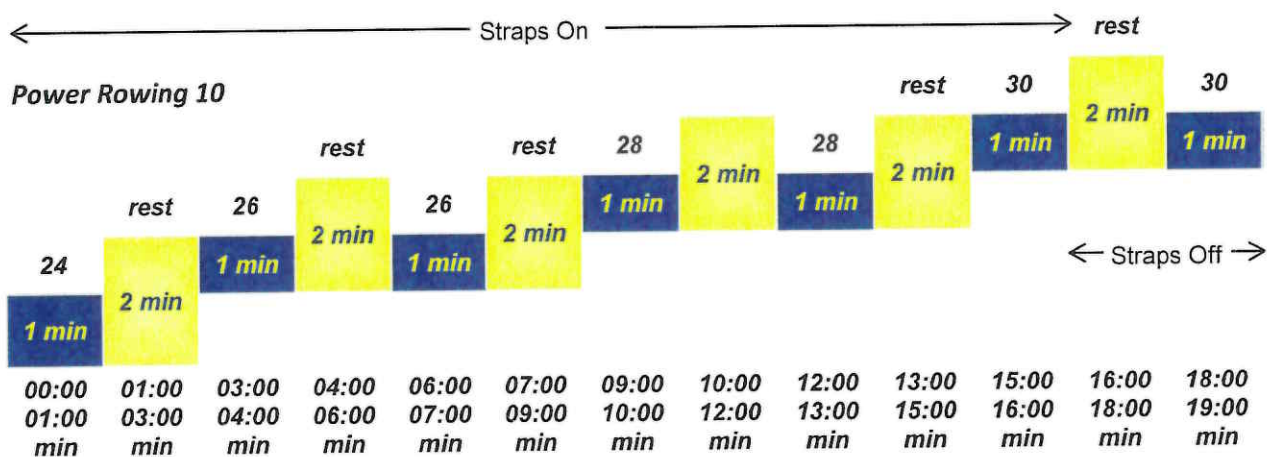
### Work 55











**Power Rowing 12**

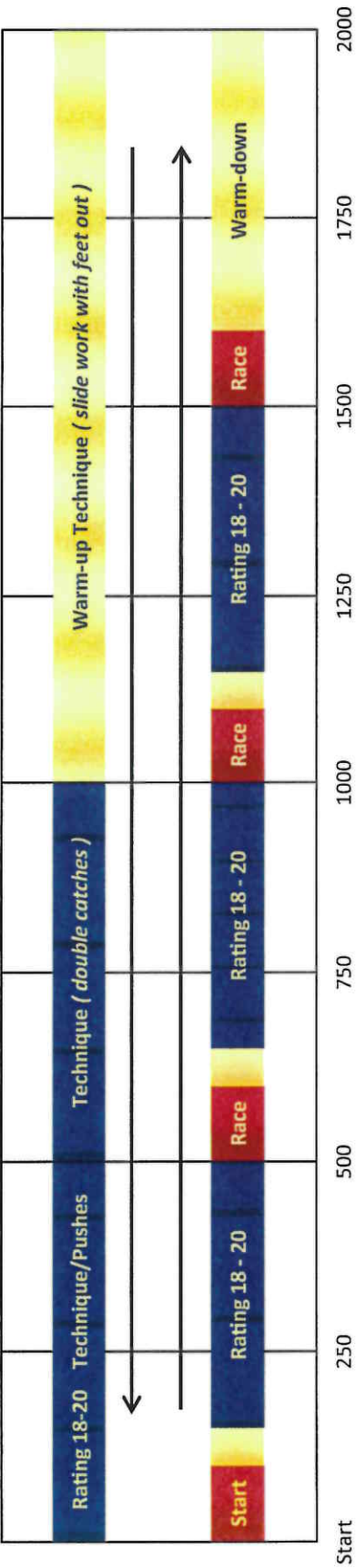
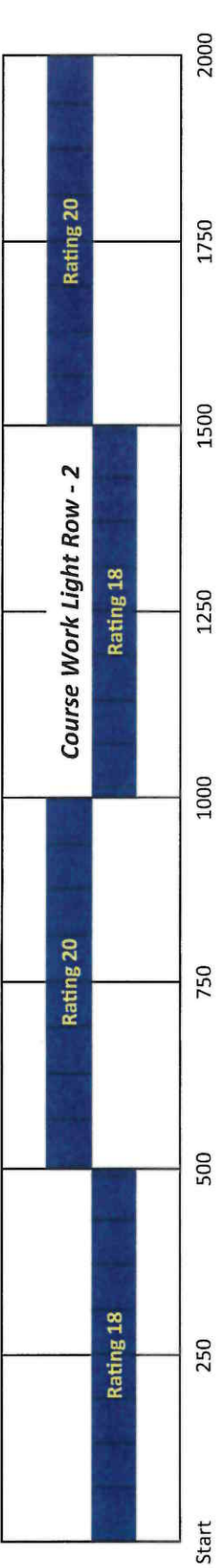
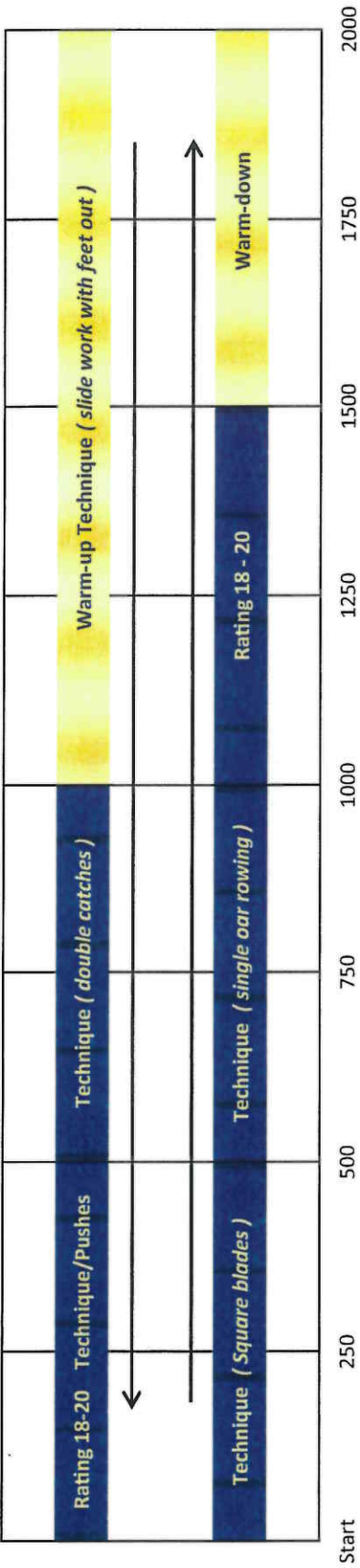
rate 16	Rate 18	rate 25 <	
20 strokes	20 strokes	10 strokes	The time left over is REST time

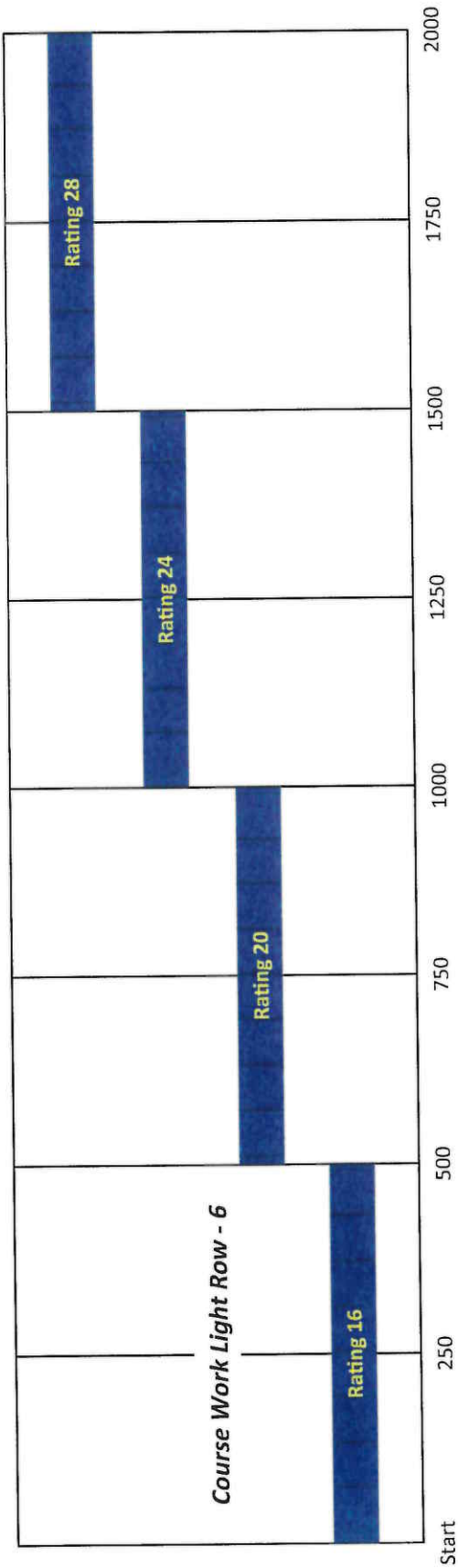
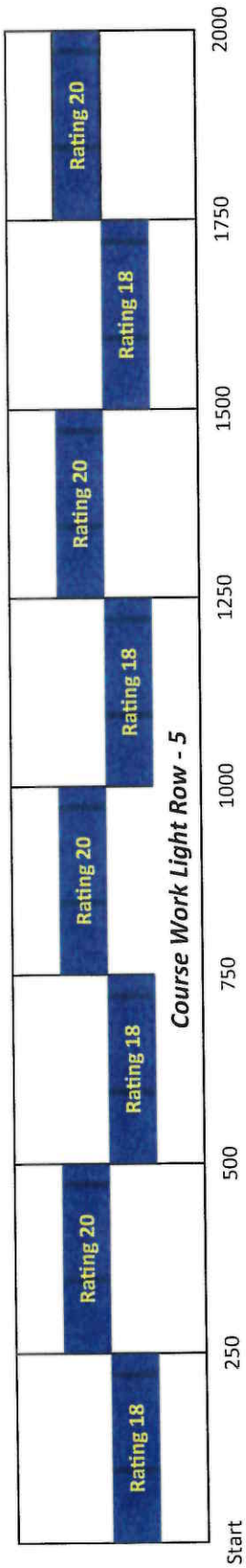
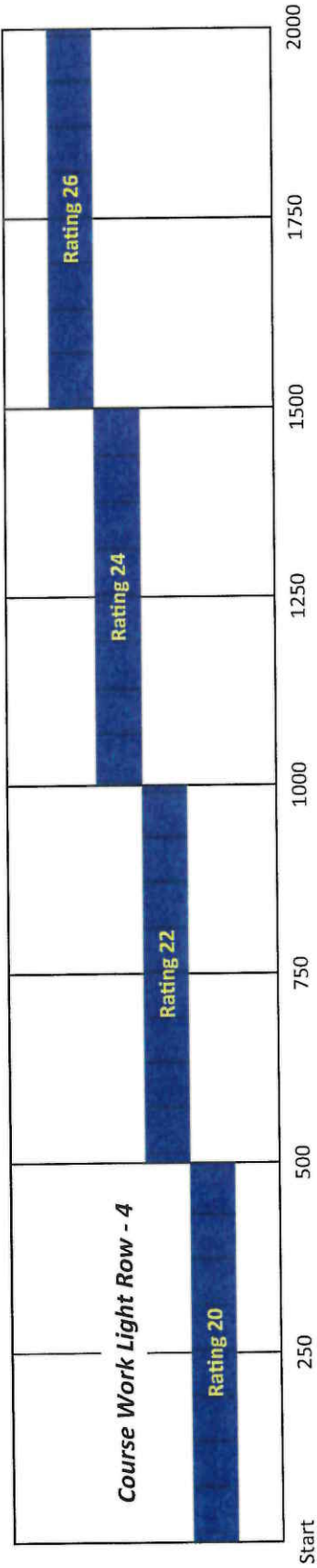
**Power Rowing 13**

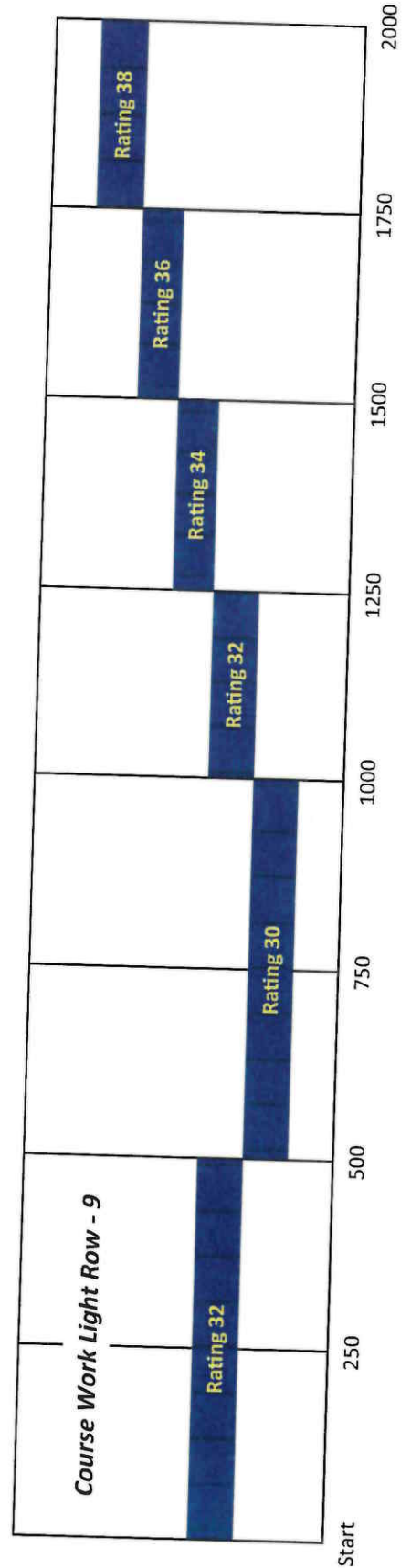
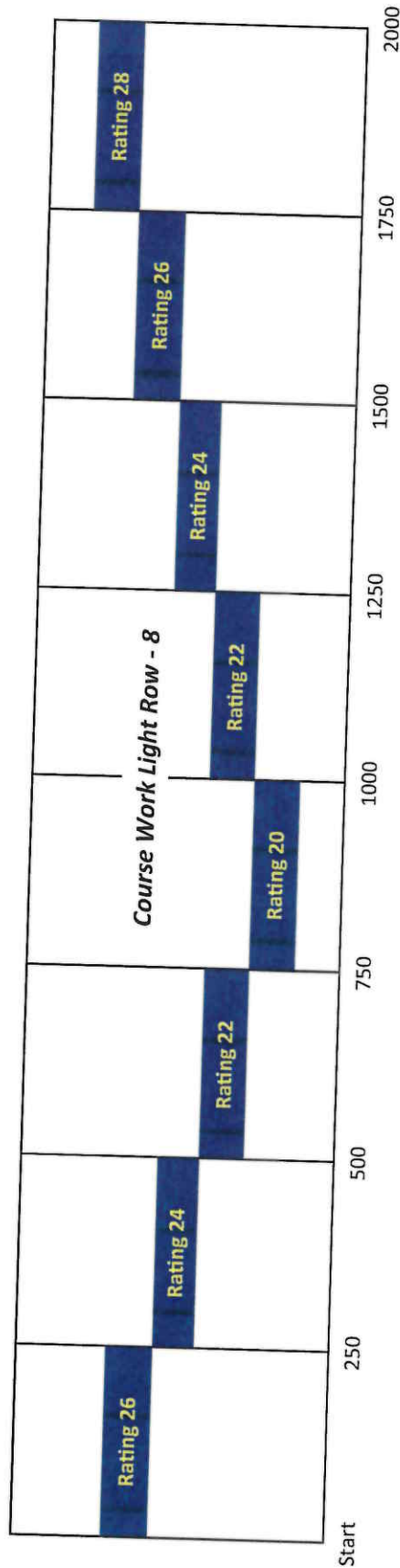
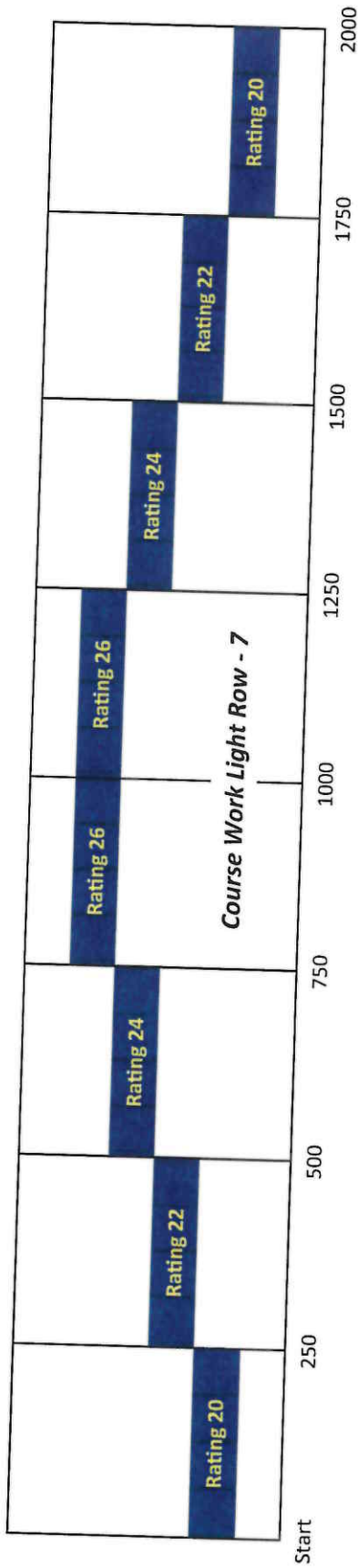
30 sec on	90 sec off	X 5 - 8
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Set Ergo on hardest setting. Sit on your 2km ergo spilt for 30 sec on / 90 sec off. Rating can not go above 20.

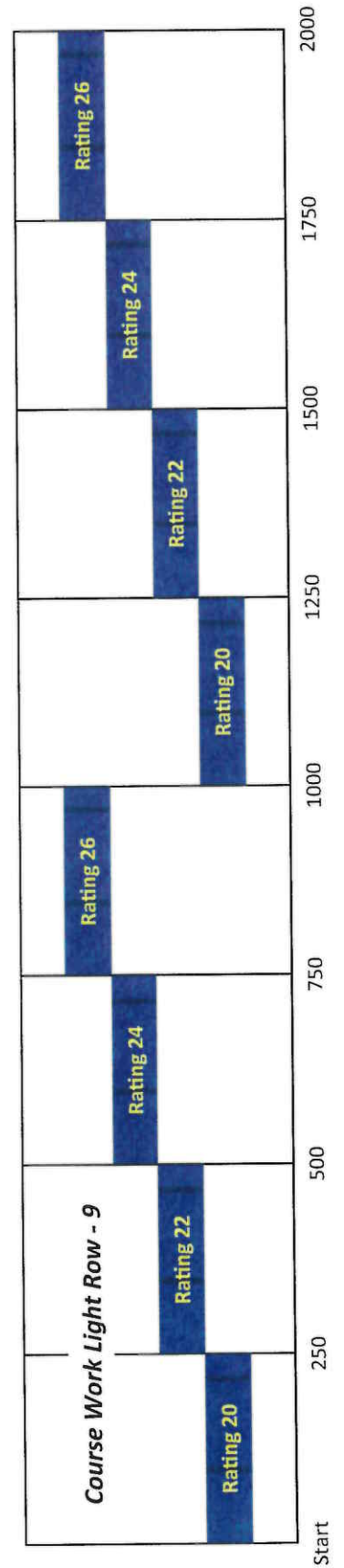
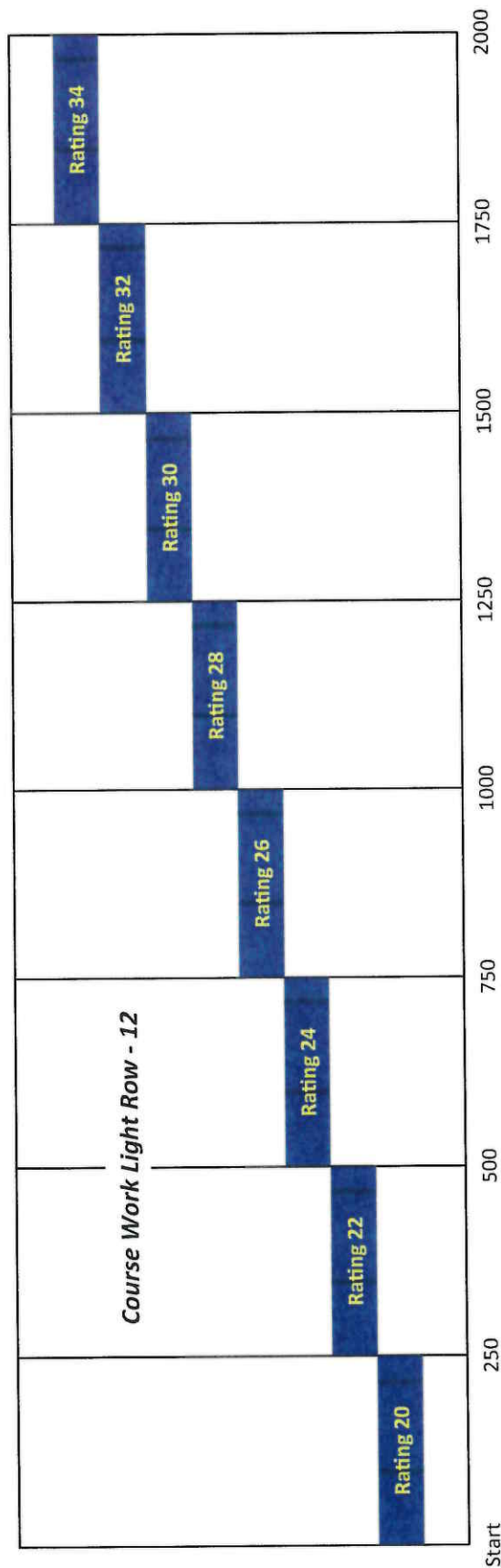
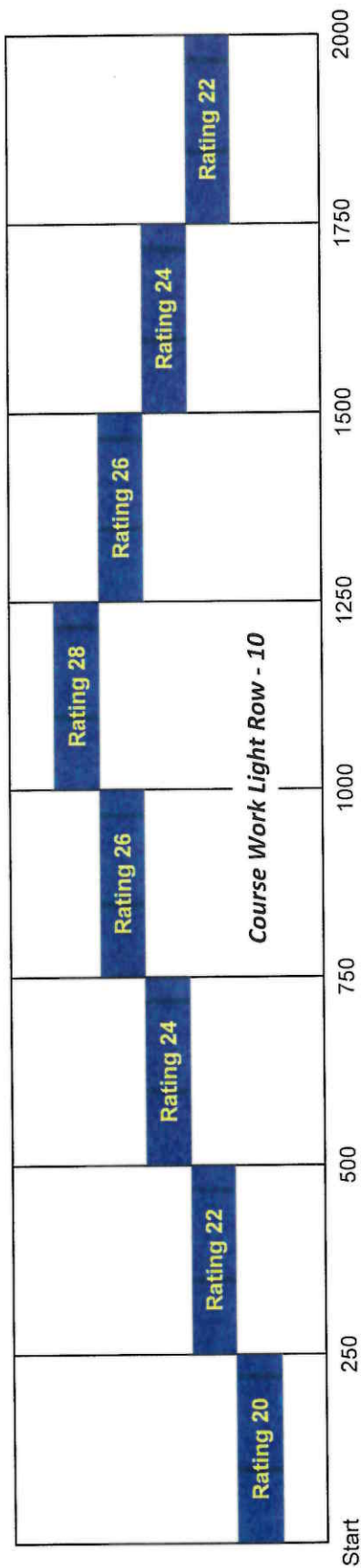


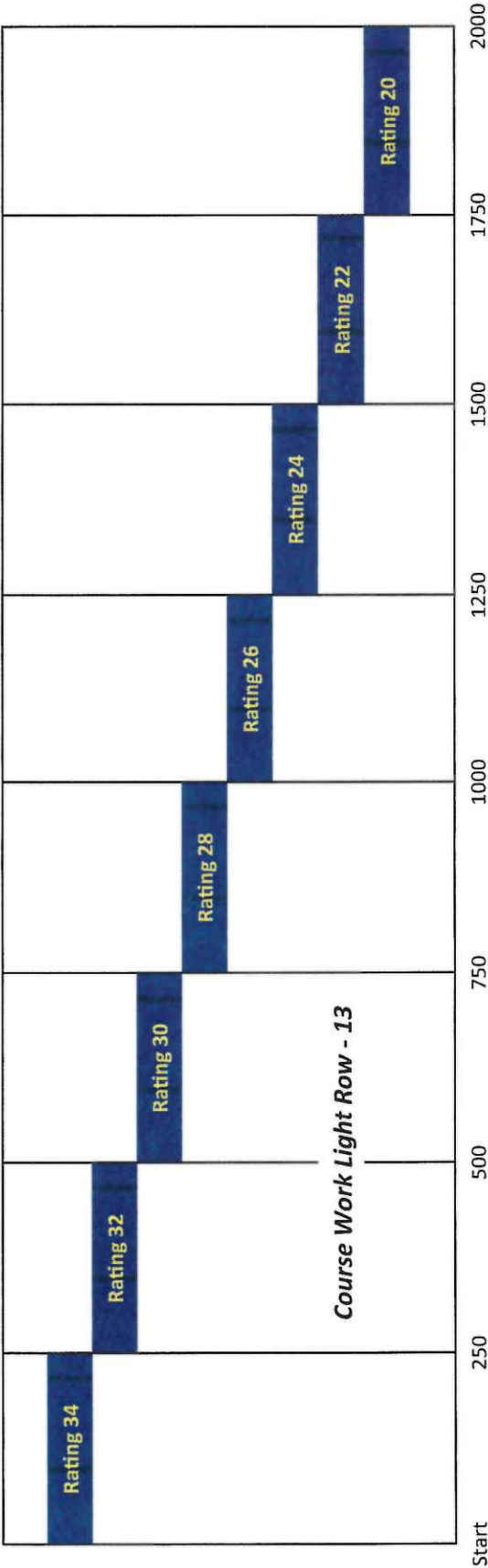
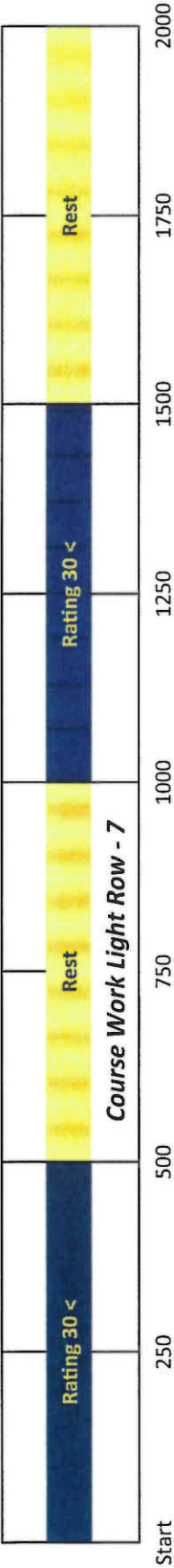
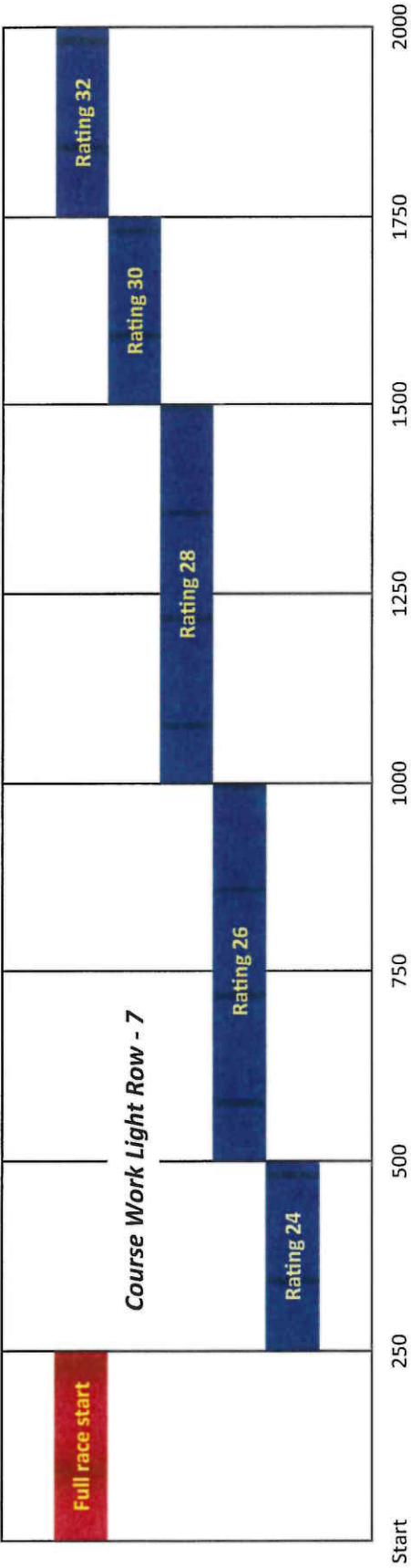


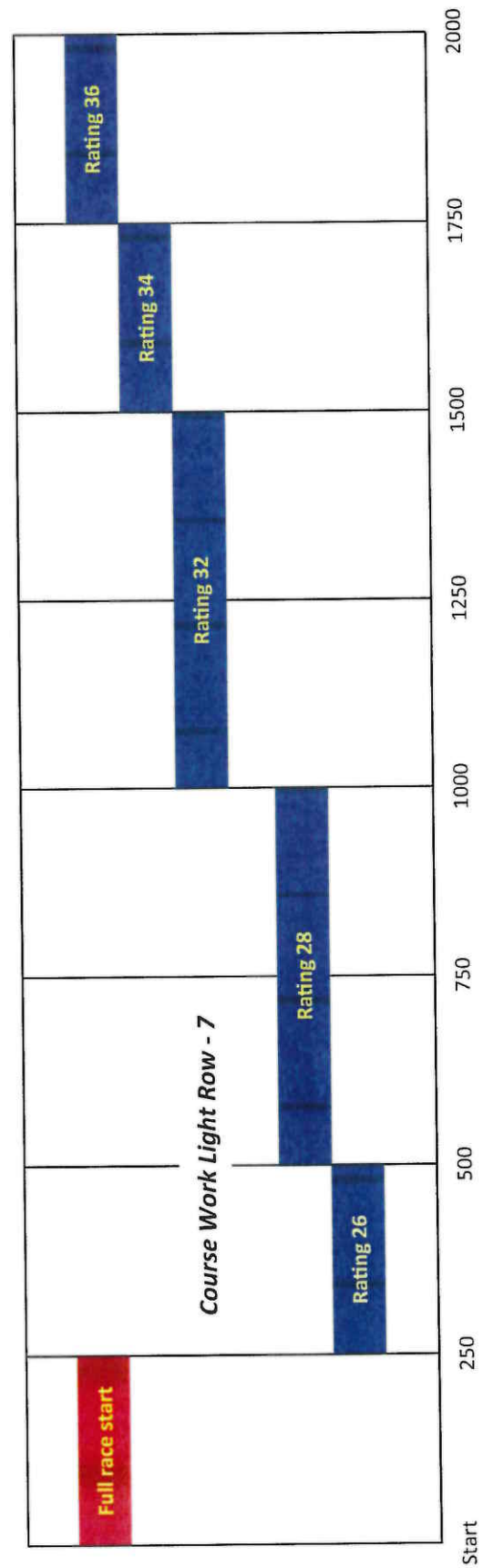
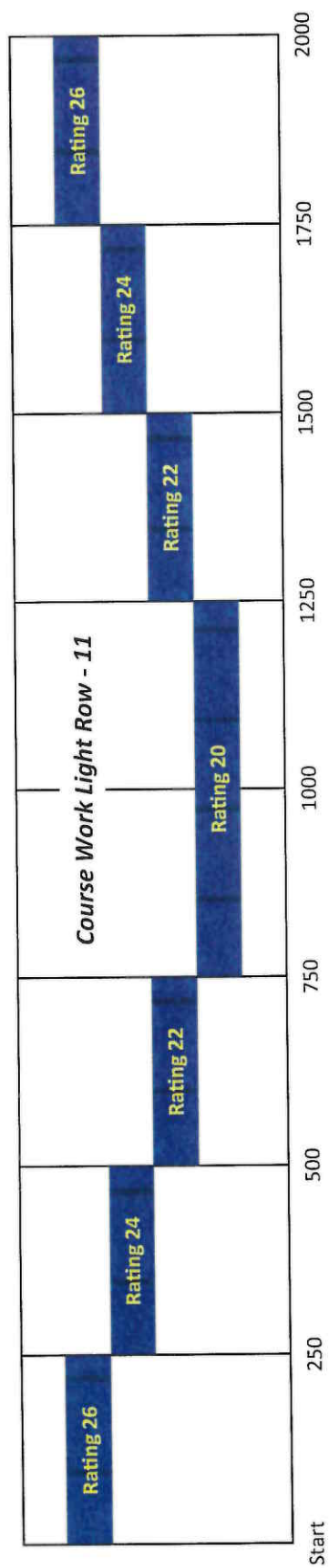
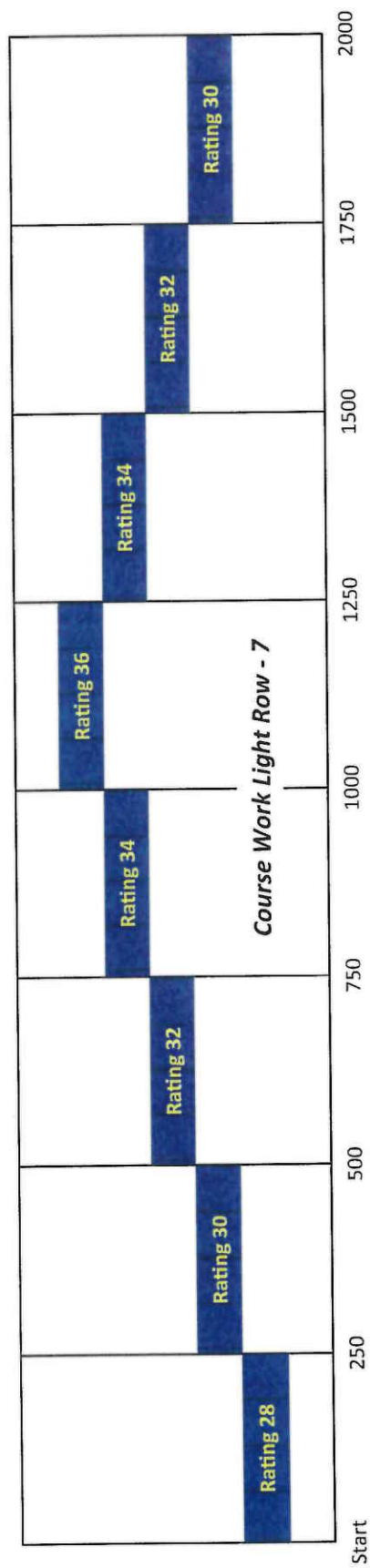




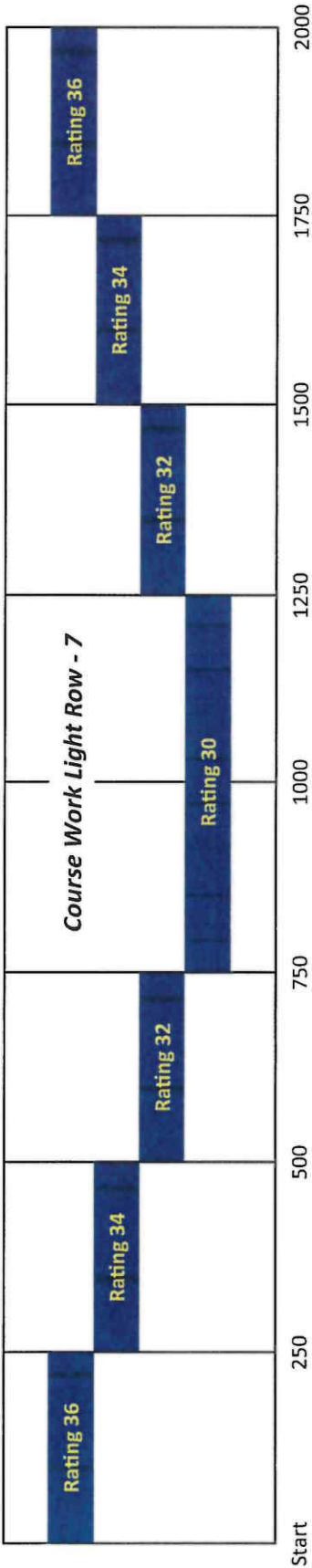
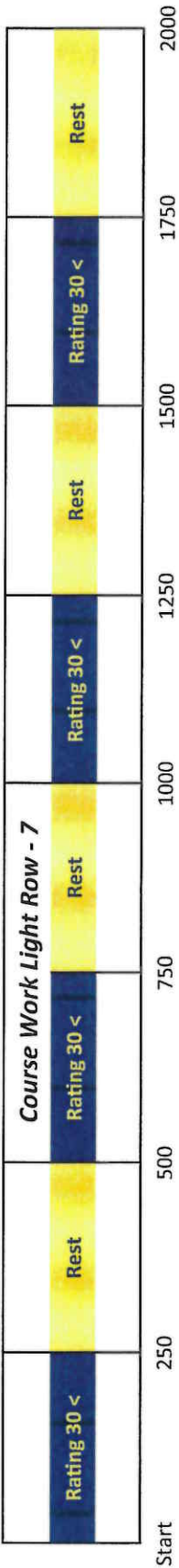
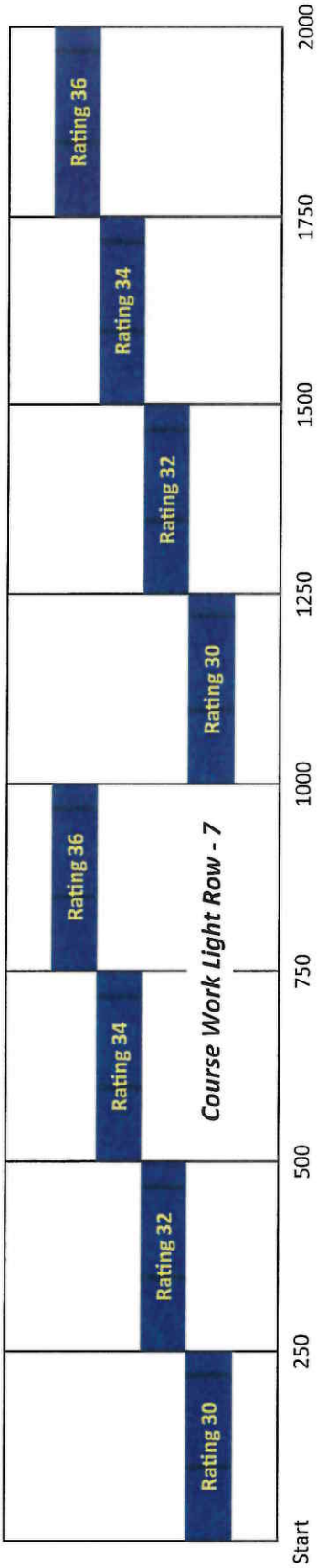


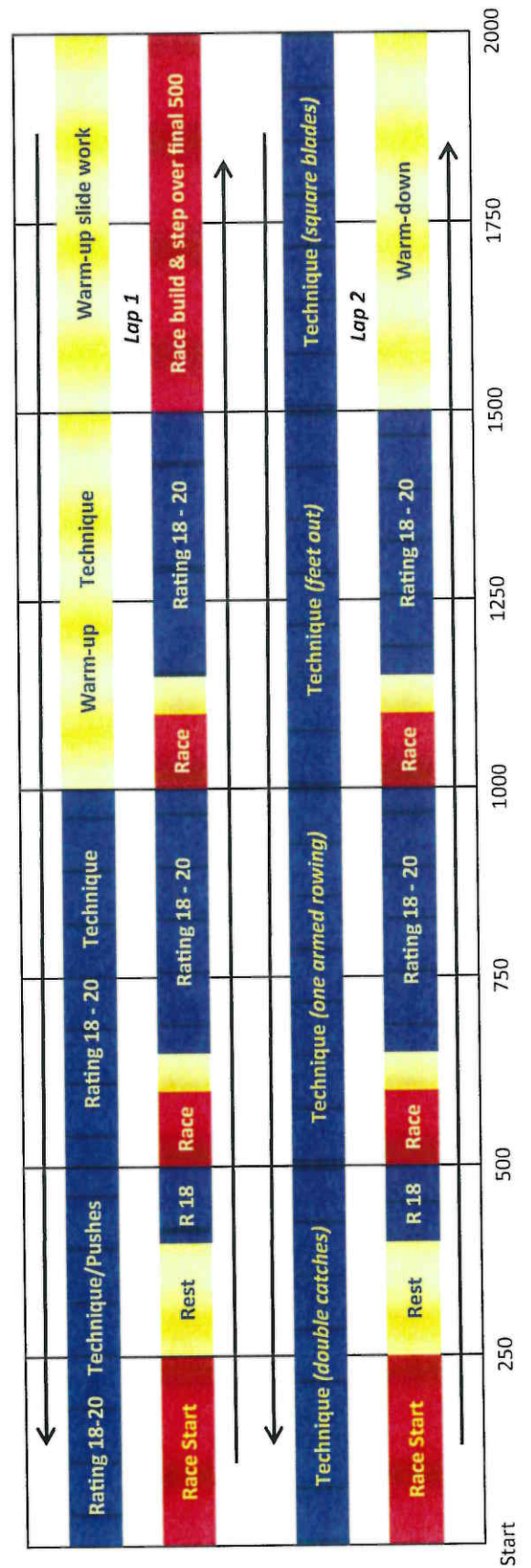
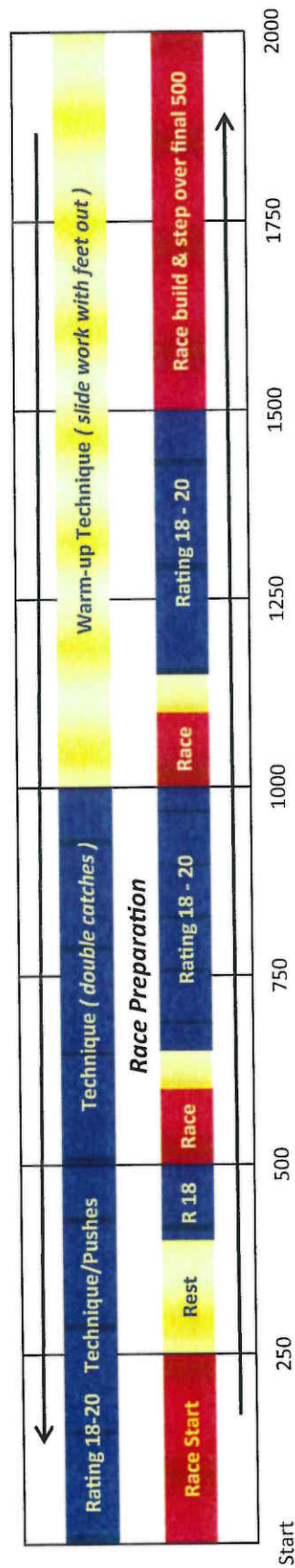
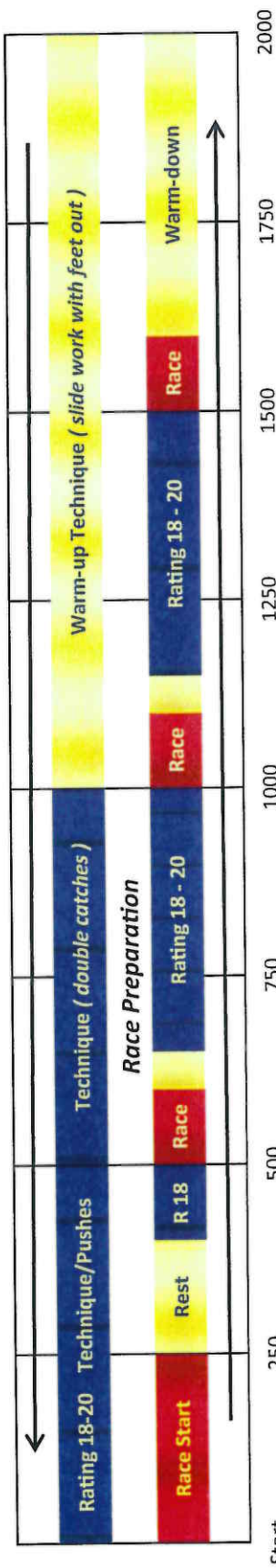








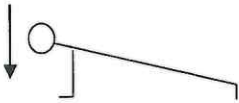
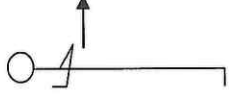
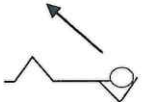
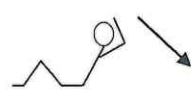
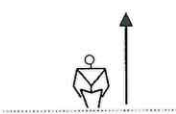
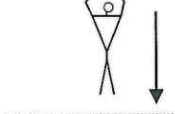
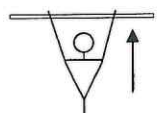
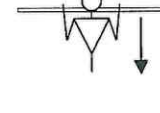
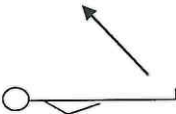
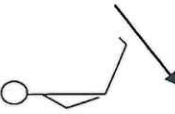
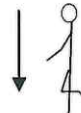

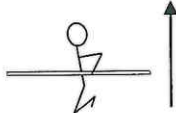
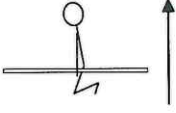
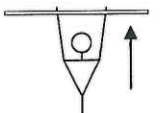
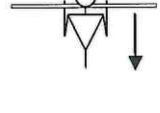
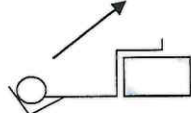
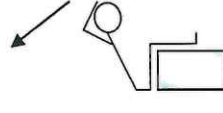

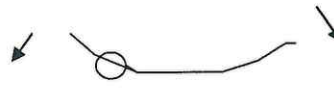




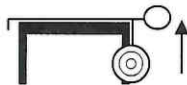

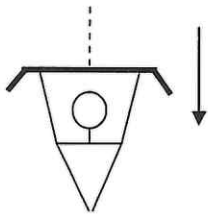
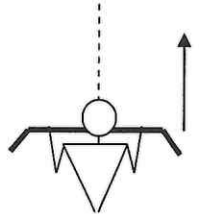
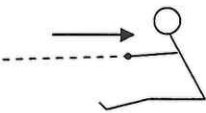
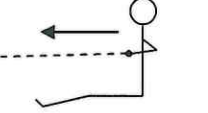
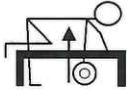
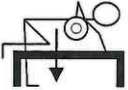
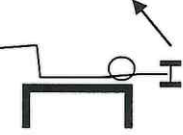

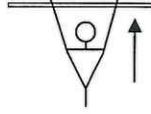
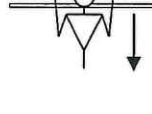
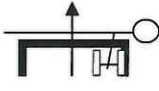
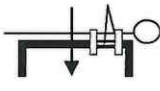
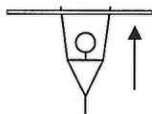
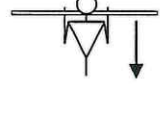
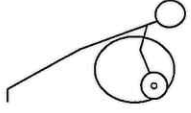
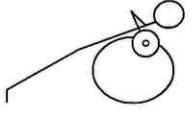




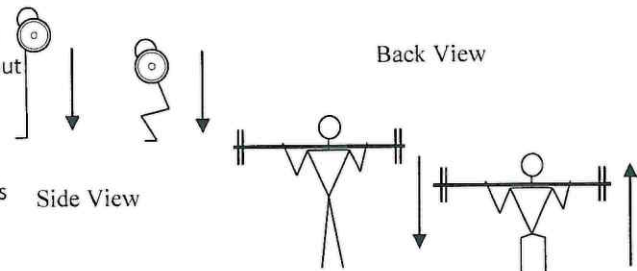
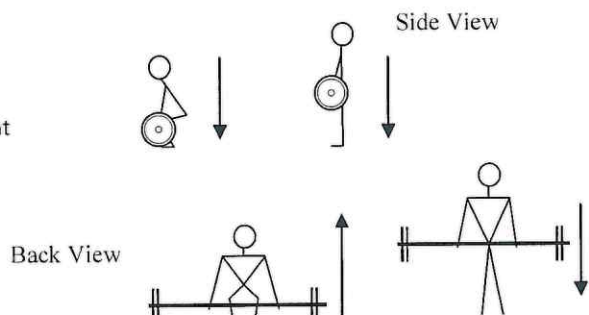
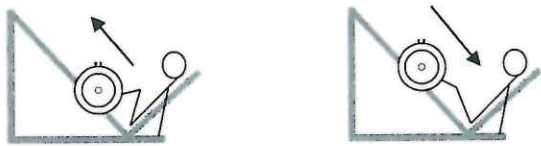

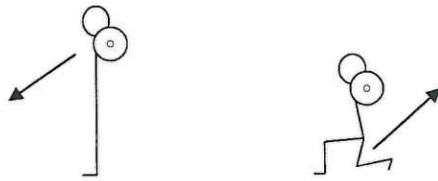


## BODY WEIGHT PROGRAM

Exercise	Name
 	<b>Push – ups</b> Pectoralis major ( <i>chest</i> ), Biceps ( <i>upper arm</i> )
 	<b>Sit – ups</b> Rectus Abdominis ( <i>upper stomach</i> )
 	<b>Squat Jumps</b> Quadratus femoris ( <i>legs</i> )
 	<b>Chin – ups</b> Biceps Brachii ( <i>upper arm</i> )
 	<b>Leg Raise</b> Rectus Abdominis ( <i>lower stomach</i> )
 	<b>One Leg Squats</b> Quadratus femoris ( <i>legs</i> ), Abdominals ( <i>stomach</i> )
 	<b>Dips</b> Inertia Deltoid, Tricep Brachii, Pectoralis major
 	<b>Chin Ups (inverse)</b> For-arms, Latissimis Dorsi
 	<b>Crunches</b> Rectus Abdominals ( <i>stomach</i> )
 	<b>Swallow Dives</b> Erector Spinae / Quadratus Lumborum

## UPPER BACK EXERCISES

Name	Points	Exercise
<b>Bench Row</b> latissimus dorsi, teres major, rhomboids, biceps	<ul style="list-style-type: none"> <li>Shoulders back</li> <li>Pull handles to abs</li> <li>Contract abs</li> </ul>	 
<b>Lat Pull-down</b> latissimus dorsi, teres major, rhomboids, biceps	Supinated Grip (underhand grip) • Grip closer than shoulder width Pronated Grip (overhand grip) • Grip bar shoulder width apart For both variations: • Back straight • Pull bar to just below chin • Straight arms at top • Contract abs	 
<b>Seated Cable Row</b> latissimus dorsi, teres major, rhomboids, biceps, lower back	<ul style="list-style-type: none"> <li>Lean forward at catch.</li> <li>Back straight at finish, shoulders back</li> <li>Knees slightly bent</li> <li>Pull handles to abs</li> <li>Contract abs</li> </ul>	 
<b>One Arm DB Row</b> latissimus dorsi, teres major, rhomboids, biceps	<ul style="list-style-type: none"> <li>Hammer Grip (thumb up) / pronated grip (overhand)</li> <li>Back straight with shoulders level</li> <li>Pull to hip (hammer grip) or chest (pronated grip)</li> <li>Ex 1 start DB under head move to hip</li> <li>Ex 2 start DB under shoulder move weight straight up to chest.</li> </ul>	 
<b>Pullover (DB or BB)</b> latissimus dorsi teres major, pectoralis major	<ul style="list-style-type: none"> <li>Lay flat on bench or fit-ball</li> <li>Weight starts above chest with arms slightly bent</li> <li>Lower weight behind head</li> <li>Keep the same elbow angle throughout</li> </ul>	 
<b>Chin-ups</b> latissimus dorsi, teres major, rhomboids, biceps	<ul style="list-style-type: none"> <li>Pronated Grip (overhand grip)</li> <li>Grip closer than shoulder width</li> <li>Grip shoulder width apart</li> <li>Back straight</li> <li>Pull up to chin</li> <li>Straight arms at bottom</li> </ul>	 
<b>Reverse Fly</b> Posterior deltoid, rhomboids, middle trapezius	<ul style="list-style-type: none"> <li>Lie face down on a bench</li> <li>DB's together under bench (hammer grip)</li> <li>Elbows slightly bent</li> <li>Lift DB's as high as possible</li> </ul>	 
<b>Inverse Chin-ups</b> latissimus dorsi, teres major, rhomboids, biceps	<ul style="list-style-type: none"> <li>Supinated Grip (underhand grip), palms facing away.</li> <li>Grip closer than shoulder width</li> <li>Back straight</li> <li>Pull up to chin</li> <li>Straight arms at bottom</li> </ul>	 
<b>Swissball dumbbell Row</b> latissimus dorsi, teres major, rhomboids, biceps	<ul style="list-style-type: none"> <li>Ball is positioned on lower abdomen.</li> <li>Back straight</li> <li>Shoulders back</li> <li>Pull handles to chest</li> <li>Contract abs</li> </ul>	 

## LEG EXERCISES

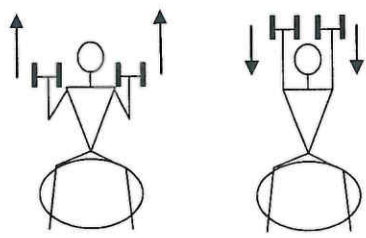
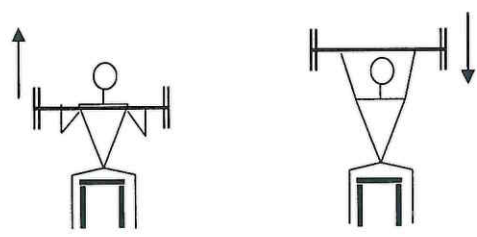
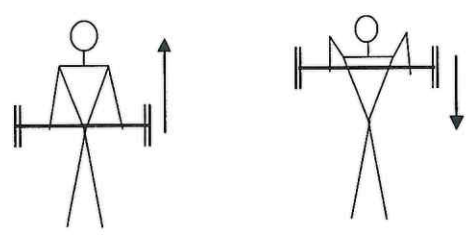
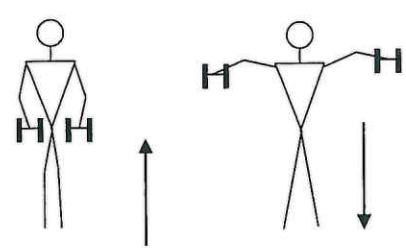
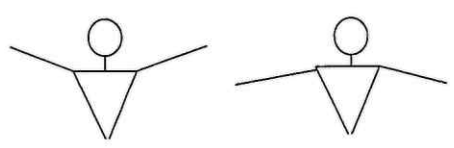
Name	Points	Exercise
<b>Squat</b>  Quadriceps, gluteus maximus, hamstrings, lower back	<ul style="list-style-type: none"> <li>• Back straight but inclined forward slightly</li> <li>• Feel like your sitting on a chair behind you</li> <li>• Feet hip width apart and slightly pointed out</li> <li>• Heels flat not on board</li> <li>• Lower to 90 degrees at knee</li> <li>• Don't go too deep so as back rounds out</li> <li>• Don't use a heel bar, bum behind the heels</li> <li>• Knees follow the line of the second toe</li> <li>• Look forward not up and contract abs</li> </ul>	
<b>Deadlift</b>  Hamstrings, gluteus maximus, quadriceps, lower back	(Start Position) <ul style="list-style-type: none"> <li>• Overhand grip outside knees, arms straight</li> <li>• Back straight and shoulders back</li> <li>• Shoulders over bar or in front</li> <li>• Feet hip width apart, under bar and heels flat</li> </ul> (Upward Phase) <ul style="list-style-type: none"> <li>• Keep bar close to body</li> <li>• Contract abs</li> <li>• Shoulders stay over bar and stand tall</li> </ul> (Downward Phase) <ul style="list-style-type: none"> <li>• Bar stays; close to body</li> <li>• Shoulders stay over bar</li> </ul>	
<b>45 Degree Leg Press</b>  Quadriceps, gluteus maximus, Hamstrings	<ul style="list-style-type: none"> <li>• Feet hip width apart</li> <li>• Lower to 90 degrees at knee</li> <li>• Knees follow 2nd toe</li> <li>• Don't lock knees at the top</li> <li>• Contract abs</li> </ul>	
<b>Step-up (BB or DB)</b>  Quadriceps, gluteus maximus / medius, Hamstrings	<ul style="list-style-type: none"> <li>• Step height allows -90 degrees at knee</li> <li>• Lift with lead leg (avoid using trail leg)</li> <li>• Knee follows 2nd toe</li> <li>• Keep hips level</li> <li>• Maintain tall posture,</li> <li>• Contract abs and keep back straight</li> </ul>	
<b>Barbell Lunge</b>  Quadriceps, gluteus maximus, hamstrings, lower back	<ul style="list-style-type: none"> <li>• Back straight and feet hip width apart</li> <li>• Step forward a comfortable distance</li> <li>• Lower back knee straight down and contract abs</li> <li>• Variations include walking lunge / reverse lunge / side lunge</li> <li>• Reverse lung with hip drive</li> <li>• Feet in a train track position</li> <li>• 2 types; standing lung split squat and walking lung</li> </ul>	
<b>Fit-ball Squat</b>  Quadriceps, gluteus maximus, hamstrings	<ul style="list-style-type: none"> <li>• Place ball between lower back and wall</li> <li>• Feet hip width apart out from wall</li> <li>• Brace abs</li> <li>• Lower to 90 degrees at knee</li> <li>• Heels flat</li> <li>• Knees follow 2nd toe</li> </ul>	
<b>One Legged Squat</b>  Quadriceps, gluteus maximus / medius, hamstrings	<ul style="list-style-type: none"> <li>• Hold balance as best you can. Use your arms to help.</li> <li>• Lower to a comfortable height</li> <li>• Keep back straight</li> <li>• Knee follows 2nd toe</li> <li>• Keep hips level</li> </ul>	



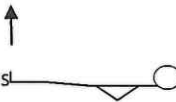
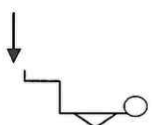

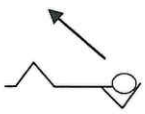

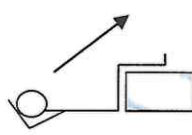
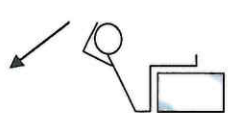
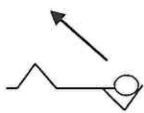

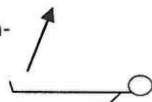
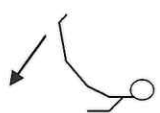



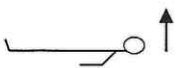

## CHEST EXERCISES

Name	Points	Exercise
<b>Dumbbell Flys</b>  Pectoralis major, anterior-deltoid, triceps	<ul style="list-style-type: none"> <li>• Elbows. slightly bent (keep, same angle throughout)</li> <li>• Feet on floor or blocks</li> <li>• Squeeze shoulder blades together and down</li> <li>• Contract abs</li> <li>• Lower to a comfortable depth</li> <li>• Variations include using a fit-ball</li> </ul>	
<b>Peck Deck</b>  Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>• Forearms on pads or elbows straight, palms down (safer for shoulder joint)</li> <li>• Squeeze shoulder blades together and down</li> <li>• Contract abs</li> <li>• Lower to a comfortable depth</li> <li>• Squeeze pads together</li> <li>• Neutral spine</li> <li>• Head on back rest</li> </ul>	
<b>Swisball Push - Ups 1</b>  Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Squeeze shoulder blades together and down</li> <li>• Contract abs</li> <li>• Lower to a comfortable depth</li> <li>• Variations include using a fit-ball</li> </ul>	
<b>Swissball Push - Ups 2</b>  Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Squeeze shoulder blades together and down</li> <li>• Contract abs</li> <li>• Lower to a comfortable depth</li> <li>• Variations include using a fit-ball</li> </ul>	
<b>Barbell Bench Press</b>  Pectoralis major, anterior deltoid, Triceps	<ul style="list-style-type: none"> <li>• Feet on floor or blocks</li> <li>• Even width grip</li> <li>• Squeeze shoulder blades together and down</li> <li>• Lower bar to highest point of chest</li> <li>• Contract abs</li> <li>• Variations include using incline or decline bench</li> <li>• If working on a low bench then feet can go on the ground for stability</li> </ul>	
<b>DB Bench Press</b>  Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>• Feet on floor or blocks</li> <li>• Elbows, underneath weight</li> <li>• Squeeze shoulder blades together and down</li> <li>• Lower DB's to a comfortable depth</li> <li>• Contract abs</li> <li>• Variations include using incline or decline bench and fit-ball</li> <li>• Down to chest level</li> <li>• Up to fully extended and touch weights at top.</li> </ul>	
<b>Push - Ups</b>  Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Squeeze shoulder blades together and down</li> <li>• Contract abs</li> <li>• Lower to a comfortable depth</li> <li>• Variations include using a fit-ball</li> </ul>	

## SHOULDER EXERCISES

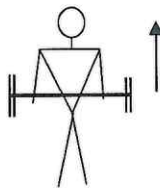
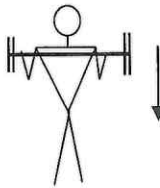


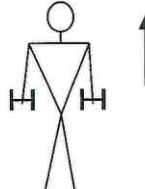
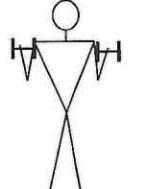
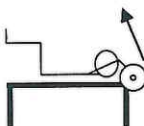
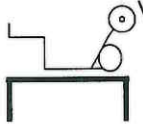
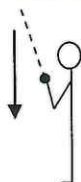

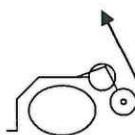
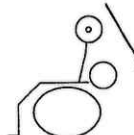
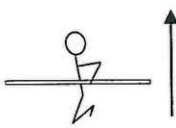
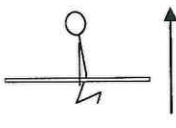
Name	Points	Exercise
<b>DB Shoulder Press</b>  Anterior deltoid, middle deltoid, triceps	<ul style="list-style-type: none"> <li>• Can be performed sitting (bench or fit-ball) or standing</li> <li>• Elbows underneath weight</li> <li>• Contract abs</li> <li>• Lift weight slightly in front of forehead</li> <li>• Bring DB's together at the top</li> <li>• Appreciate</li> </ul>	
<b>Military Press</b>  Anterior deltoid, middle deltoid, triceps	<ul style="list-style-type: none"> <li>• Usually performed standing or sitting in a smith machine</li> <li>• Grip bar - shoulder width apart</li> <li>• Contract abs</li> <li>• Lift bar slightly in front of forehead</li> <li>• Lower bar to front of neck</li> </ul>	
<b>Upright Row</b> (DB's or BB)  Anterior deltoid, middle deltoid, biceps	<ul style="list-style-type: none"> <li>• Overhand grip shoulder width apart</li> <li>• Shoulders back</li> <li>• Knees slightly bent</li> <li>• Raise bar until upper arm is level with shoulders</li> <li>• Keep elbows higher than wrists</li> <li>• Contract abs</li> </ul>	
<b>Side DB Raise</b> (side lat raise)  Middle deltoid, anterior deltoid	<ul style="list-style-type: none"> <li>• Standing, knees slightly bent</li> <li>• Contract abs</li> <li>• Raise DB's until level with shoulders</li> <li>• Palms face downwards</li> <li>• Variations include sitting on a bench or fit-ball</li> </ul>	
<b>Flutter</b>  Posterior deltoid, rhomboids, middle trapezius	<ul style="list-style-type: none"> <li>• Lie face down on a bench or floor</li> <li>• Arms out to the side</li> <li>• Lift arms up and down in a controlled manner</li> <li>• Thumbs up / thumbs down / palm down / figure 8's / circles</li> </ul>	

## ABDOMINAL EXERCISES

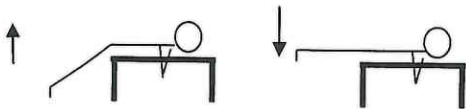
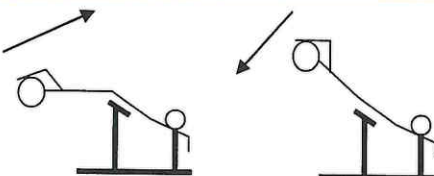
Name	Points	Exercise
<b>Bracing</b>  (prone isometric) Transversus, internal obliques	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Draw navel to spine</li> <li>• Breathe throughout</li> <li>• Variations include Knees and elbows, elbows and toes, or using a fit-ball</li> </ul>	 
<b>Supine Trunk</b>  Stabilisation Transversus, internal obliques	<ul style="list-style-type: none"> <li>• Lie on back, knees bent, feet on the ground</li> <li>• Maintain normal lumbar curve</li> <li>• Draw navel to spine</li> <li>• Breathe throughout</li> <li>• Lift and straighten one leg (closer to ground more difficult). For increased difficulty lift and straighten both legs</li> </ul>	
<b>Sit-Up</b>  Rectus abdominus, transversus	<ul style="list-style-type: none"> <li>• Lie on back, knees bent, feet on the ground</li> <li>• arms across chest or behind head</li> <li>• Maintain normal lumbar curve</li> <li>• Draw navel to spine</li> <li>• Breathe throughout</li> <li>• Curl slowly and under control</li> </ul>	 
<b>Crunches</b>  Rectus abdominus, transversus	<ul style="list-style-type: none"> <li>• Lie on back, knees bent, with lower leg on a bench</li> <li>• arms across chest or behind head</li> <li>• Maintain normal lumbar curve</li> <li>• Draw navel to spine</li> <li>• Breathe throughout</li> <li>• Curl slowly and under control</li> </ul>	 
<b>Slow downs</b>  Rectus abdominus transversus	<ul style="list-style-type: none"> <li>• Sit on floor, knees bent, feet on the ground, arms across chest</li> <li>• Lower slowly and under control (e.g 6 sec down)</li> <li>• Aim for consistent speed throughout</li> <li>• Repeat for specified number of reps</li> </ul>	 
<b>Reverse Crunch</b>  (flat or incline) Rectus abdominus	<ul style="list-style-type: none"> <li>• Lie on back, knees and hips at 90 degrees</li> <li>• Hold behind head</li> <li>• Curl pelvis towards chest slowly and under control</li> <li>• Return to start position slowly</li> </ul>	 
<b>Bridge</b>  Gluteus maximus, hamstrings	<ul style="list-style-type: none"> <li>• Supine position, knees straight, feet on fit ball</li> <li>• Raise pelvis so that knees, hips and shoulder form a near straight line</li> <li>• Squeeze gluteus maximus together</li> <li>• Variation includes head and shoulders on fit-ball, feet on floor</li> </ul>	 
<b>Bracing</b>  Transversus, internal obliques	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Squeeze gluteus maximus together</li> <li>• Use all core muscles</li> </ul>	
<b>Bracing</b>  Transversus, internal obliques	<ul style="list-style-type: none"> <li>• Maintain normal lumbar curve</li> <li>• Squeeze gluteus maximus together</li> <li>• Use all core muscles</li> </ul>	 



## BICEPS & TRICEPS EXERCISES

Name	Points	Exercise	
<b>Standing EZ Bar Curl</b>  Biceps, Brachialis	<ul style="list-style-type: none"> <li>Semi supinated grip</li> <li>Knees slightly bent, shoulders back</li> <li>Contract abs</li> <li>Elbows in by your side</li> <li>Back straight</li> <li>Variations include D13's (when using DB's can sit on a flat bench, incline bench, fit-ball or can stand) or using a straight BB</li> </ul>		
<b>Concentration Curl</b>  Biceps, Brachialis	<ul style="list-style-type: none"> <li>Sitting on-end of-a bench</li> <li>Elbow against knee</li> <li>Can rotate radioulnar joint during movement</li> </ul>		
<b>Standing Dumbbell Curl</b>  Biceps, Brachialis	<ul style="list-style-type: none"> <li>Knees slightly bent, shoulders back</li> <li>Contract abs</li> <li>Elbows in by your side</li> <li>Back straight</li> <li>Variations include D13's (when using DB's can sit on a flat bench, incline bench, fit-ball or can stand) or using a straight BB</li> </ul>		
<b>Lying Triceps Extension</b> (bench or fit-ball) Triceps	<ul style="list-style-type: none"> <li>Grip bar shoulder width or closer</li> <li>Start with arms straight, weight above chest</li> <li>Keep elbows still and lower bar to forehead</li> </ul>		
<b>Triceps Pushdown</b>  Triceps	<ul style="list-style-type: none"> <li>Elbows stay in by your side</li> <li>Shoulders back</li> </ul>		
<b>Triceps Kickback</b>  Triceps	<ul style="list-style-type: none"> <li>Back straight</li> <li>Elbow stays in by your side</li> </ul>		
<b>Body Dips</b> (using dip bars) Pectoralis major, anterior deltoid, triceps	<ul style="list-style-type: none"> <li>Narrow grip for more triceps / wider grip for more chest</li> <li>Lower to a comfortable depth</li> <li>Contract abs</li> <li>Variations include bench dips</li> <li>Drop to arms 90 deg.</li> <li>Hands close uses more triceps</li> <li>Hands apart uses more pecks.</li> </ul>		

## LOWER BACK EXERCISES

Name	Points	Exercise
<p><b>Prone Leg Raise</b></p> <p>(bench or fit-ball)</p> <p>Erector spinae, hamstrings, gluteus maximus</p>	<ul style="list-style-type: none"> <li>• Raise legs (one or both) up to the horizontal</li> </ul>	 <p>The diagram illustrates the Prone Leg Raise exercise. It shows a person lying face down on a bench or fit-ball. In the first position, the legs are raised straight up to a horizontal position, indicated by an upward arrow. In the second position, the legs are lowered back down towards the floor, indicated by a downward arrow.</p>
<p><b>Back Extension</b></p> <p>Erector spinae, hamstrings, gluteus maximus</p>	<ul style="list-style-type: none"> <li>• Raise upper body up to the horizontal</li> </ul>	 <p>The diagram illustrates the Back Extension exercise. It shows a person lying on their back on a bench or fit-ball. In the first position, the upper body is raised up to a horizontal position, indicated by an upward arrow. In the second position, the upper body is lowered back down towards the floor, indicated by a downward arrow.</p>

