

LONDON SOCIETY REFEREES PRESEASON
FITNESS TRAINING PROGRAMME

2018-19

ADVANCED LEVEL

‘Train hard ref easy’

By Ross Hanbury

Rugby union referee's pre-season fitness programme: advanced level

Welcome to the Advanced level pre-season fitness programme 2016-17 for rugby union referees. This programme has been put together as a guide for those referees who followed a structured programme last year and are looking to step up their fitness levels once again this season. Referees who are looking to achieve level 16.2 or more on the YOYO test will also benefit from following this programme. This programme is 12 weeks long and requires the participant to complete between two and four training sessions each week, with each session lasting between 60 and 80 minutes in total. Before starting this fitness training programme though, it is imperative that if there are any medical or previous injury issues that you feel could impact or be made worse by a change in your physical activity levels; then you need to get in contact with your doctor, or myself on the e-mail address below.

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In order to handle the physical demands of refereeing a game of rugby it is imperative that the modern day referee is physically fit. If a referee is unfit and not able to keep up with play; then it is unlikely that they will be in the right place at the right time to make the correct decision relating to the game.

‘Being fit allows you to focus on making the right decision and not how out of breath you are!’

At this point in time it is actually very difficult to accurately quantify the physical demands of refereeing a game of rugby; however with the recent development of global positioning system (GPS) technologies, we are now starting to get a bit more of an understanding of the physical demands at the elite level. An IRB study run by Matt Blair between 2009 and 2013 used GPS technologies to look at trying to quantify some of the physical demands placed on referees across 360 top level games.

The study showed that:

- 1. Referees on average covered 6.8 kilometers in a game**
- 2. Of the 6.8 kilometers covered, 1.5 kilometers were covered at high* Intensity speeds**
***metres covered above 51% of each referees maximum speed.**
- 3. Time spent running at high intensity speeds averaged 5.47 mins per game.**
- 4. Time spent above 80% of heart rate maximum (individualised to each referee) accounted for 43.43 mins in total.**
- 5. Referees on average performed 13 sprints a game ranging from 6 to 40 metres in distance.**

Simplifying the IRB study findings we can say that the modern referee at any level of the game needs to have:

A high level of aerobic fitness/endurance

The ability to handle the high intensity running that occurs during the game

To fall in line with the International Rugby Board, Rugby Football Union and National Panels testing protocols, many societies use the YOYO intermittent recovery test level 1 (YYITRTL1), to assess the fitness levels of its members across all levels.



The YYITRTL1 is similar to the 'bleep test' requiring participants to run between two cones which are 20 metres apart. However the YYITRTL1 allows participants a 10 second rest after the second 20 metre run. The speed at which the 2 x 20 metre runs must be completed at increases progressively for the YYITRTL1, until the participant can no longer complete the runs or choose to stop. An example of some 'ok' players doing performing the YYITRTL1 can be seen in the video clip below:



<http://www.youtube.com/watch?v=nwYx62e2VJI>

The YYITRTL1 better reflects and assess the physical demands of refereeing, as it is intermittent in nature (stop and start) which is similar to the activity profile whilst refereeing. The test provides participants with a quantifiable insight as to how their fitness compares to other referees across the refereeing standards, all the way up to IRB (international) standard. With this information referees can determine how much time they need to spend on extra fitness work, in accordance with their refereeing aspirations. One of the focuses of this programme is to help the referee achieve a score of 16.2 on the YO YO test.

For more information on the YYITRTL1 (YO YO Test) please feel free to get in touch with me via e-mail.

Ok so let's start to put the programme together!

In order to get the most out of any training programme there are three training principles that need to be adhered to during this programme:

Specificity: So that your training has the desired effect and gets you fitter for refereeing, it is important that all the training sessions you do are 'referee specific'. We can design sessions that

are referee specific by using the research on the physical demands of refereeing (such as that by Blair 2013, above) to guide our programme design. A classic mistake which is often made, is when referees simply 'go for a run' in order to get fit to referee and don't consider the intensity they are working at. Now going for a run will keep you healthy, however it will not address and get the body used to handling the intermittent, high intensity nature of refereeing. An example of a session that would be more beneficial for a referee would be one that is done on grass and is interval based with multiple changes in direction (such as those found in the programme below). This would then prepare and improve all the physical fitness qualities a referee needs during a match.

Overload: In order to get fitter, you are going to need to push your body and current fitness above what it is used to (within reason). When pushed beyond its current capacity, your body will adapt and make improvements, which means in the long run you will get fitter!

To assist with this process (overload), it is imperative that you consider a few things. The first of these is your pre and post diet.

Your diet should consist of:

Lean proteins: chicken, fish and eggs etc

Complex carbohydrates: brown rice, brown bread and sweet potatoes etc

Nutritious vegetables: broccoli, spinach and kale etc

Water: 2 litres every day, 3 litres on training days (includes fluids from teas, coffees and fruits)

For more information on the sorts of foods and meal plans please see the Muscle Building or Weight Loss guides for referees*

*drop me an e-mail if you would like a copy

Secondly as you are looking to step up your fitness levels it is essential that you include some core stability (injury prevention/performance enhancement) work and strength exercises in the gym. In order to assist you in this area I have put together two programmes (found towards the end of this document: one which targets the muscles that will keep your body strong as you exercise (core stability programme). Whilst the other programme looks at some examples of stretches and foam rolling exercises that will help you stay injury free and recover faster between sessions.

Also during this pre-season programme period, I will look to get strength and conditioning info, such as exercises to optimize your running performance out on social media platforms.

Finally, as you are undertaking the advanced programme which will push your body hard over the next 12 weeks; recovery strategies need to be in place for after each session (in an ideal world!).

Some recovery strategies to consider (in addition to good eating and drinking practices) are:

Passive Recovery: Other

Post-game and heavy training sessions (options include...)

Contrast water therapy (CWT) 'Hot & Cold' - limit in hot/humid environment

| Hot (38°C) | Cold (8-10(12))°C | |
|------------|-------------------|------------------|
| 2 mins | 1(2) min | x3 (5) rotations |

Cold water immersion (CWI) 'Cold' - useful in all environments (?very cold)

| Cold (8-10(12))°C | Out of cold | |
|-------------------|-------------|------------------|
| 5 mins | 2 mins | x2 (3) rotations |

As recommended by IRB
Fitness Advisor Matt Blair

Compression garments

Wear for an extended period of time, as practical

Note.
Various brands available
Ensure qualified advice on brand chosen, e.g. from National Referee Physical Conditioner
Choose garments that you feel comfortable in, e.g. avoid those that cause skin rash

Massage

Light full body... (include appropriate partner assisted stretching)

9 Pool Recovery

- 1 5-10 minutes: 'Easy-somewhat hard' (RPE 2-5/10⁺) jog/swim patterns
Fluid & ROM
- 2 5-10 minutes: 'Somewhat hard' (RPE 5/10⁺) alternate upper (e.g. Baseball swing) and lower body (e.g. Leg kicks) muscle endurance exercise
Fluid & ROM
- 3 5-10 minutes: 'Very hard - maximal' (RPE 7-10/10⁺) 5-10 sec in place sprints
Fluid & ROM
- 4 Other considerations:
 - Balance activities (e.g. Deep water stand. float board)
 - Swimming races
 - Bombs
 - Muscle activation in / side of pool
 - Ice bath and contrast hot-cold
- 12 Overall: Use resistance property of water
 - Keep it simple
 - What you do - do it properly*

Passive Recovery: Sleep

Amount and quality of sleep is super important for recovery from physical activity.

Aim for 8-10 hours of **good-great** sleep each night

Note. To be monitored if considered an issue

Things to be mindful of before going to bed:

Avoid

- TV and computers
- Reading anything too stimulating
- Caffeine and alcohol
- Snacks - particularly grains and sugars

Instead consider

- Listening to relaxing music
- Taking a sleep supplement, e.g. Tart Cherry juice (capsules), Dr Mercola Melatonin **SLEEP SUPPORT**
- Going to bed as early as possible
- Sleeping in complete darkness
- Taking a hot bath or shower before bed
- Having an established 'time to bed' and 'time to wake'**

~~Now the important point to remember with these recovery strategies is that some of these are not possible due to the facilities not being available to you. So therefore just make sure above all else you get some good food and a night's sleep post every training session. Then where possible 'top up' your recovery with any of the three strategies above. If you have any questions~~

on any of the above then do not hesitate to e-mail me.

Progression: So that you keep improving your fitness levels, you need to keep pushing your fitness work along (by manipulating either the intensity or volume of the, day, week or training period etc). However it is important to note that progressing your programme too quickly could potentially result in over training and injury. Conversely progressing your training too slowly could do the opposite and result in no improvements in training at all. Similar to overload, the programme below has suitable rates of progression to ensure that you achieve your goals safely.

Individuality: The fourth and probably most important principle of training (accompanying the other training principles above) is the principle of individuality. In order for a programme to be successful and effective, it needs to work for you. It needs to fit into your life/work schedule and allow you to put as much energy into the training sessions as possible. Therefore, no two people's programmes should be the same. This is where I come in; if you feel that the programme below does not fit into your routine/lifestyle then let me know and we go look to change a few things around so that it does.

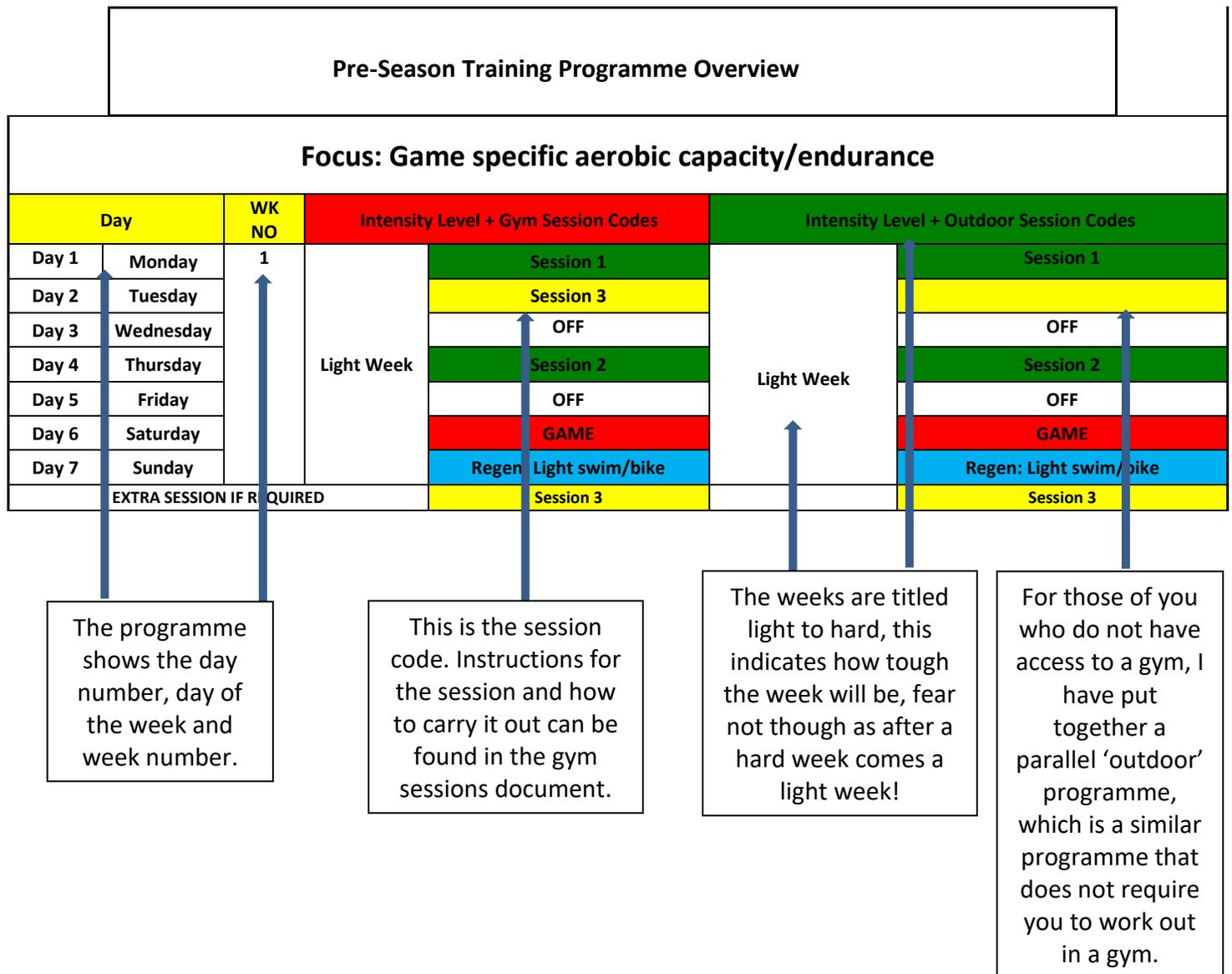
The following programme has been put together so that you are in the optimum physical shape for the fitness testing sessions and the season.

For the preseason it is advised that you follow a session to rest ratio of 1:1, in other words you train 1 day and then rest the next day (1).

Page 8 onwards in this document will now show you to develop and build your fitness levels in a progressive and safe way, however before looking at that it is important to explain how the charts in the programme work.

The programme is broken down into three key areas:

1. The programme over view, like below. This shows an overview of the training week
2. The gym based sessions
3. The outdoor sessions (these are sessions that are very similar in terms of the areas of fitness worked on as the gym based sessions; but can be done outside).



The table below is an example of a session (session 1 on the programme) break down that is found after the programme overview table in this doc. This is where the instructions for the training sessions can be found.

The session codes table shows the session number out of 10, how hard the session should be and what piece of kit you would ideally do the session on.

To help you plan and fit the session into your diary, there is an estimation of how long the session should take.

| Session Plans (Gym Based) | | | | | YO YO Test Target | | | |
|---------------------------|---------------|------------------------|-----------------------|---|-------------------|-----------------------|-----------------------|------------------|
| | | | | | 14.6 | | | |
| Code | Heart Rate | Recommended Speed High | Recommended Speed Low | Session Content | Sets | Work (Secs or Metres) | Rest Duration btw Set | Session Duration |
| 1 | 75-85% HR Max | N/A | N/A | 1. Warm Up 2. Row 2KM 3. Perform 3 Mins of core work 4. Row 2KM 5. 3 Mins of core work 6. Row 1 KM | 1 | 2KM, 2KM, 1KM | N/A | 25-35 Mins |

There is a detailed description of the session content, so that you know what you are doing step by step.

As for the rest of the info, don't worry too much about this, as and when you develop your fitness, these will become more important.

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|---------------------------|---------------|------------------------|-----------------------|---|-------------------|-----------------------|-----------------------|------------------|
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This year the pre-season and in-season programmes will also contain a high and low speed recommendation. These recommendations are based on a concept that is known as maximal aerobic speed (MAS); simply put MAS is the lowest speed that at which maximum oxygen uptake (VO2 Max) occurs. MAS was developed for the purpose of increasing the specificity of training

and for coaches to monitor training loads more accurately. Research has shown that MAS correlates with total, high speed distance and high speed efforts amongst athletes and officials.

In other words the more often yourself to MAS the fitter you will get, for refereeing! Therefore

I am very keen to trial this concept this season. If you have any questions on this score or how to integrate it into your training then please do not hesitate to get in contact.

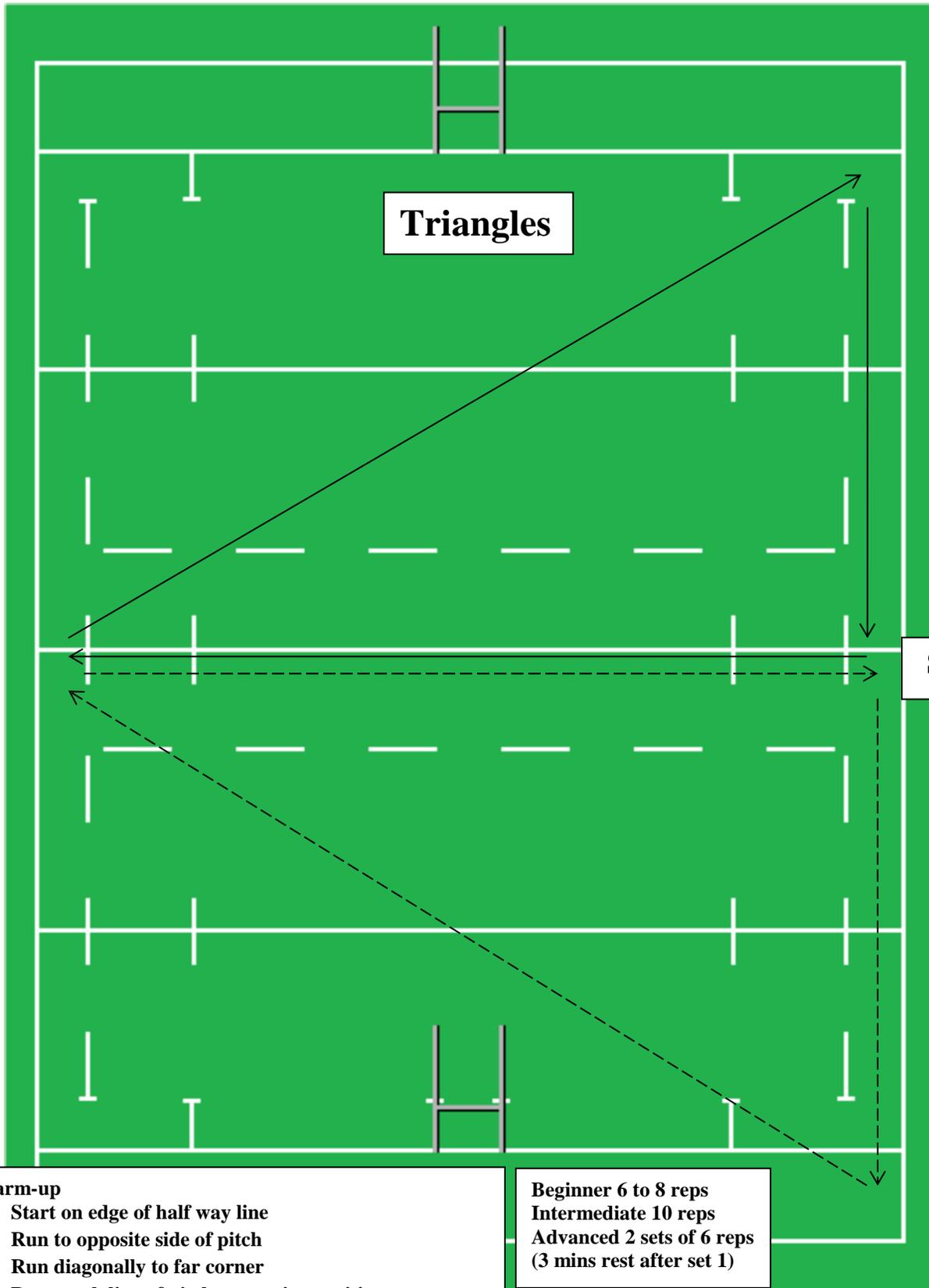
Finally, this document is designed as a guide, not as a comprehensive programme of what every referee should do. As I said, the fourth and most important principle of training is the principle of individuality. In order for a programme to be successful and effective, it needs to work for you. It needs to fit into your life/work schedule and allow you to put as much energy into the training sessions as possible. Therefore, no two people's programmes should be the same. So as long as you follow a basic outline of this programme and don't choose sessions outside their allocated weeks you will see and feel the improvements in refereeing fitness.

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Follow me on:   

Pitch based session can be found on next page

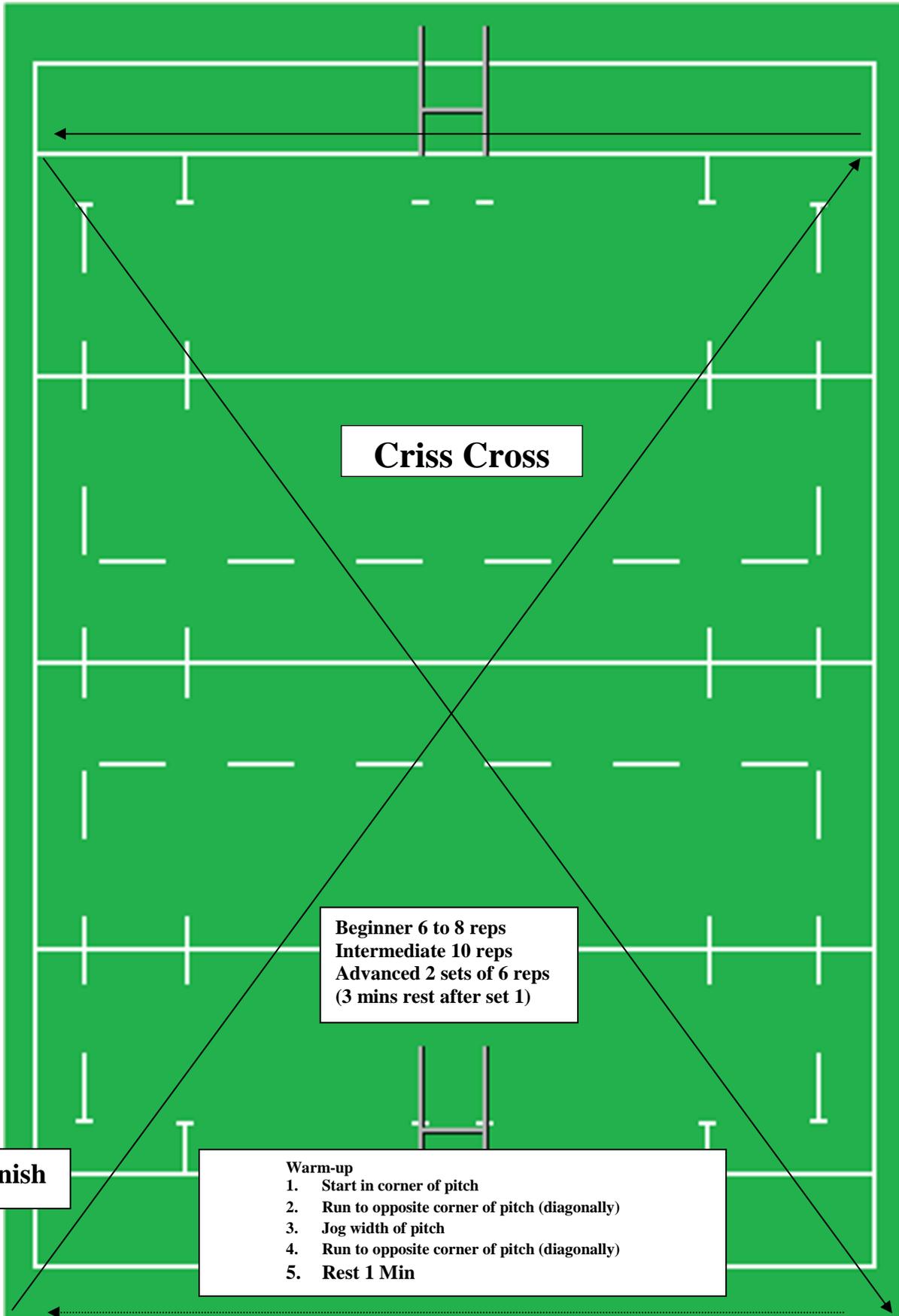




Warm-up

1. Start on edge of half way line
2. Run to opposite side of pitch
3. Run diagonally to far corner
4. Run touch line of pitch to starting position
5. Repeat same pattern (jogging) on other side of pitch

Beginner 6 to 8 reps
Intermediate 10 reps
Advanced 2 sets of 6 reps
(3 mins rest after set 1)



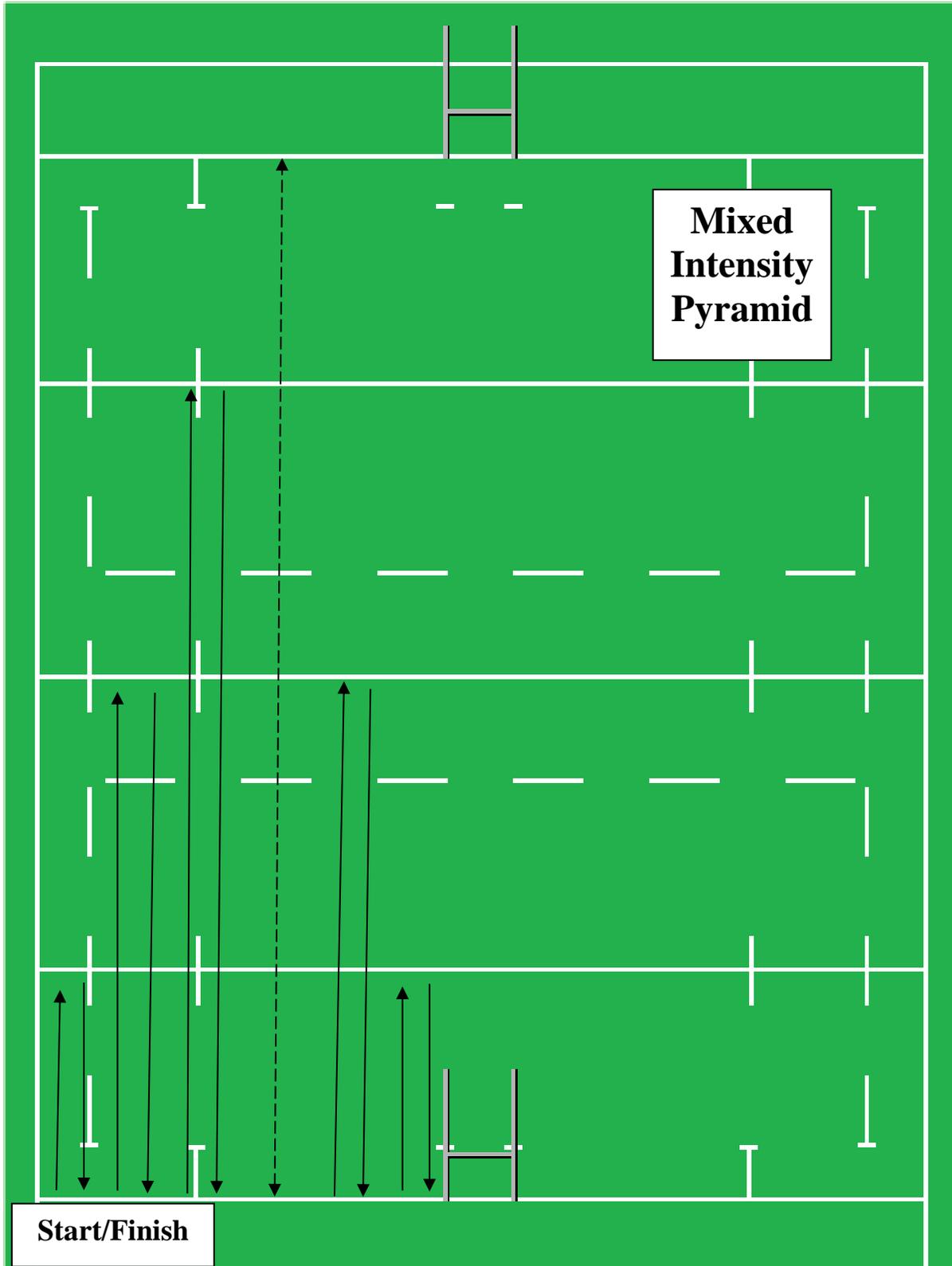
Criss Cross

Beginner 6 to 8 reps
Intermediate 10 reps
Advanced 2 sets of 6 reps
(3 mins rest after set 1)

Start/Finish

- Warm-up**
1. Start in corner of pitch
 2. Run to opposite corner of pitch (diagonally)
 3. Jog width of pitch
 4. Run to opposite corner of pitch (diagonally)
 5. Rest 1 Min



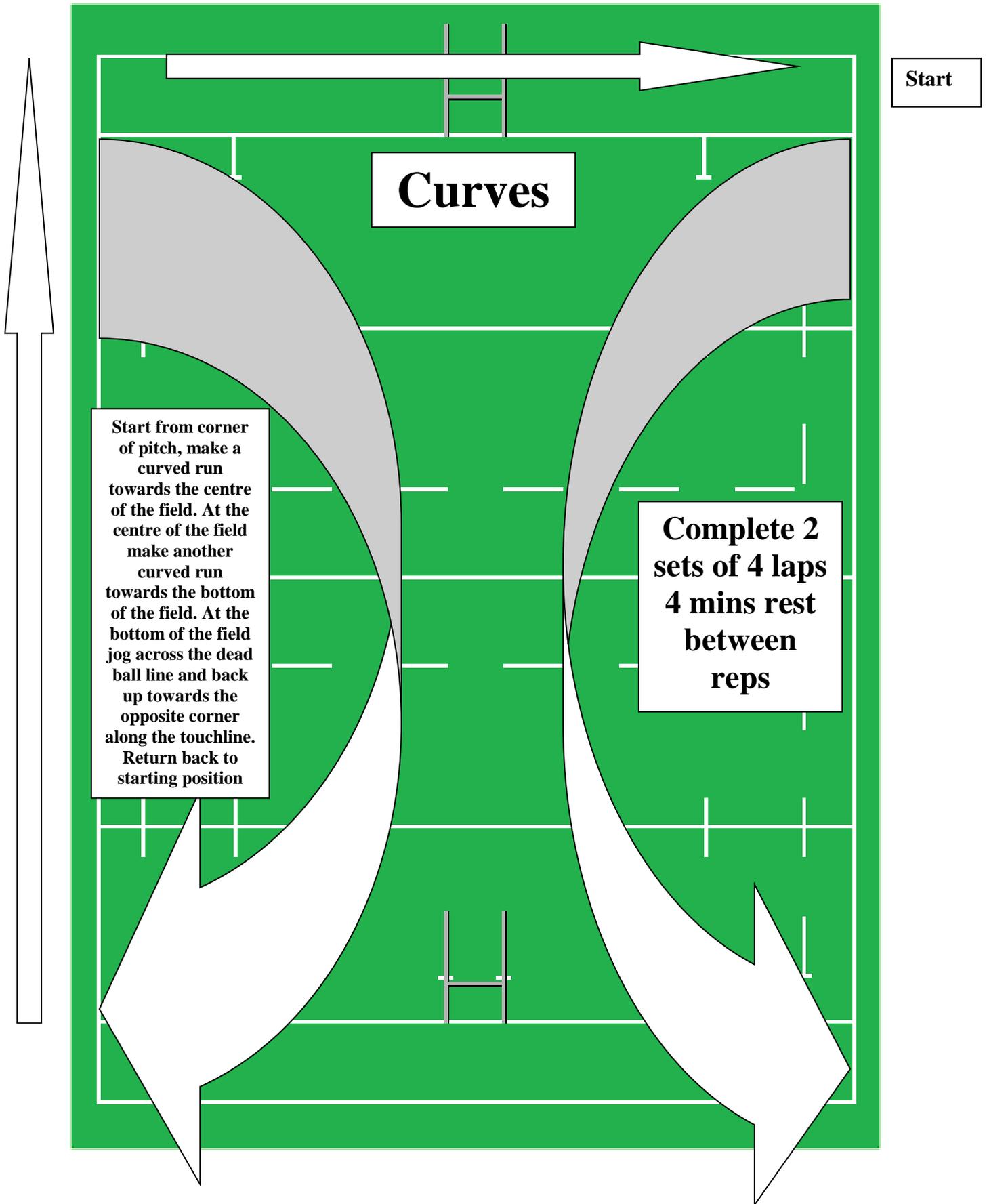


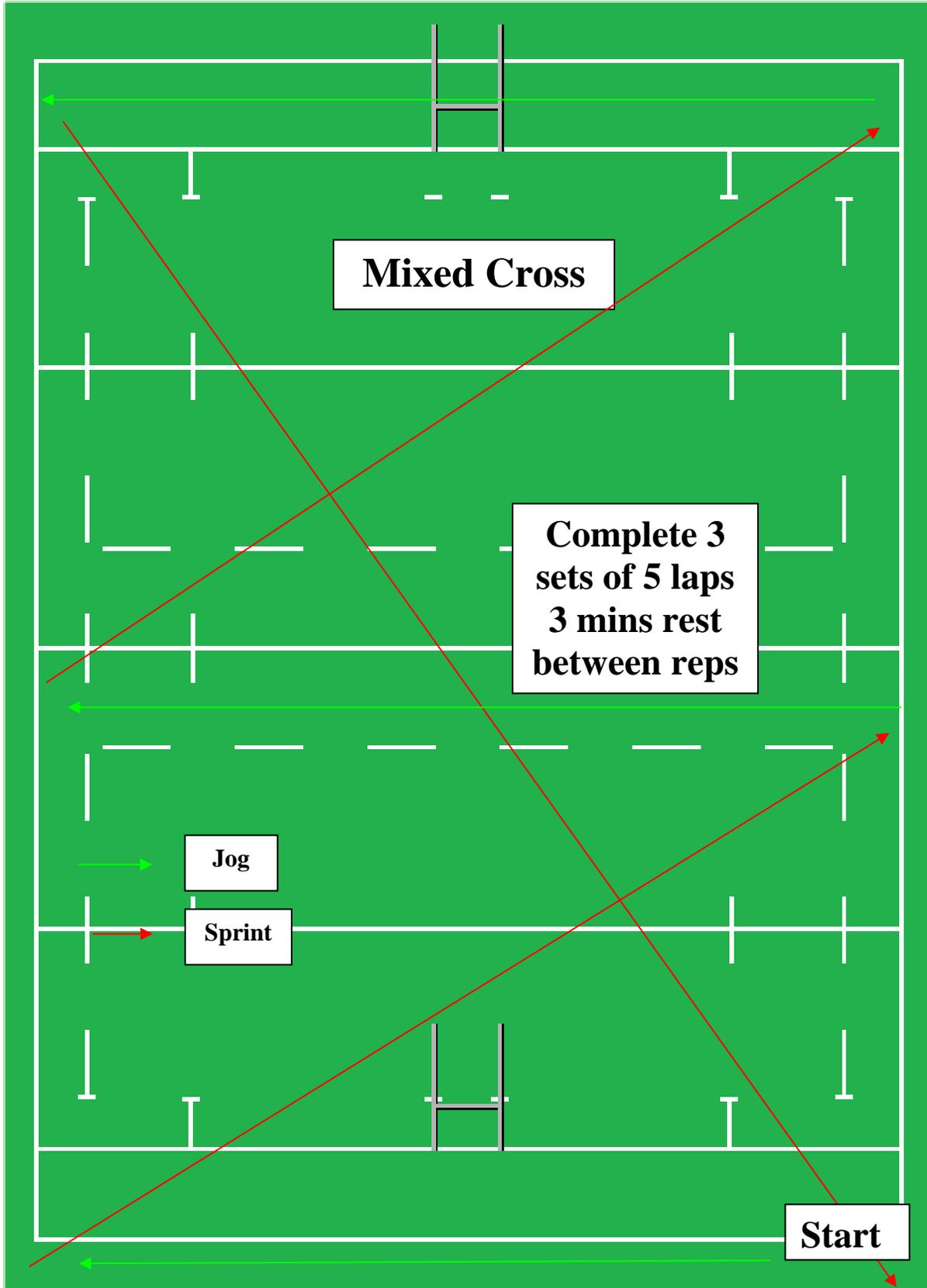
Start/Finish

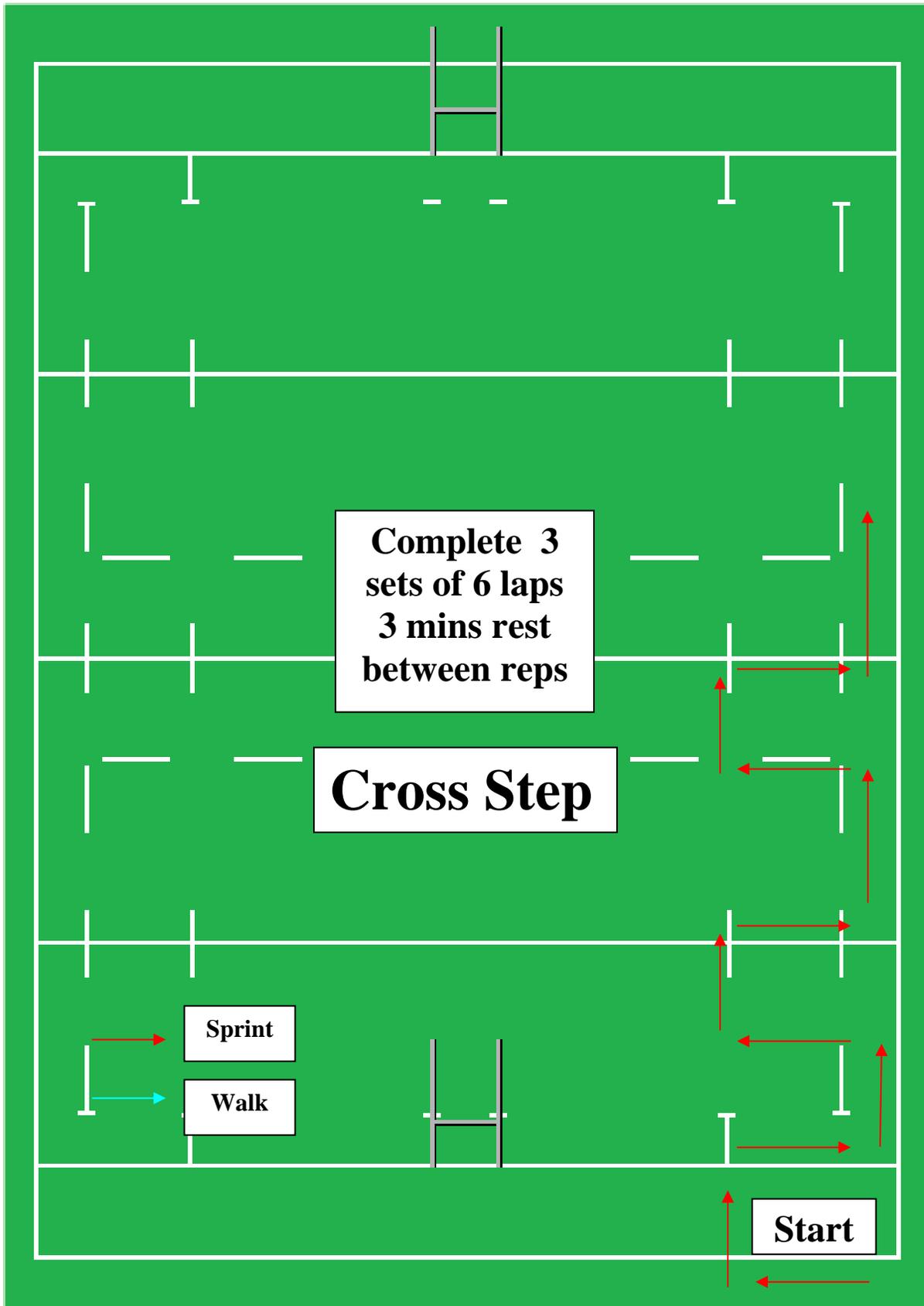
1. Sprint to 22m line and back
2. Jog to half way line of pitch and back
3. Sprint to opposite 22m line and back
4. Fast walk to opposite try line and back
5. Sprint to half way line and back, jog to half way and back
6. Jog to 22m line and back
7. Rest 3 Mins

Beginner 1 to 2 reps
Intermediate 2 to 3 reps
Advanced 3 to 4 reps
4 Mins rest between reps

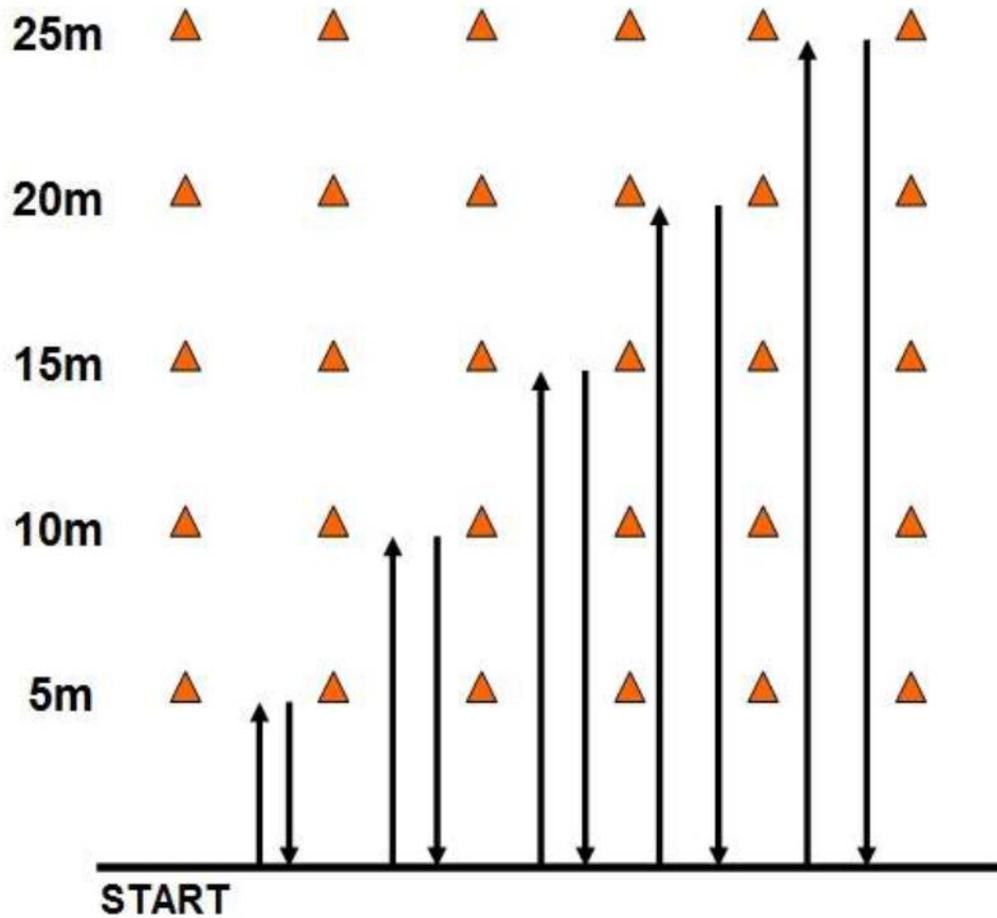






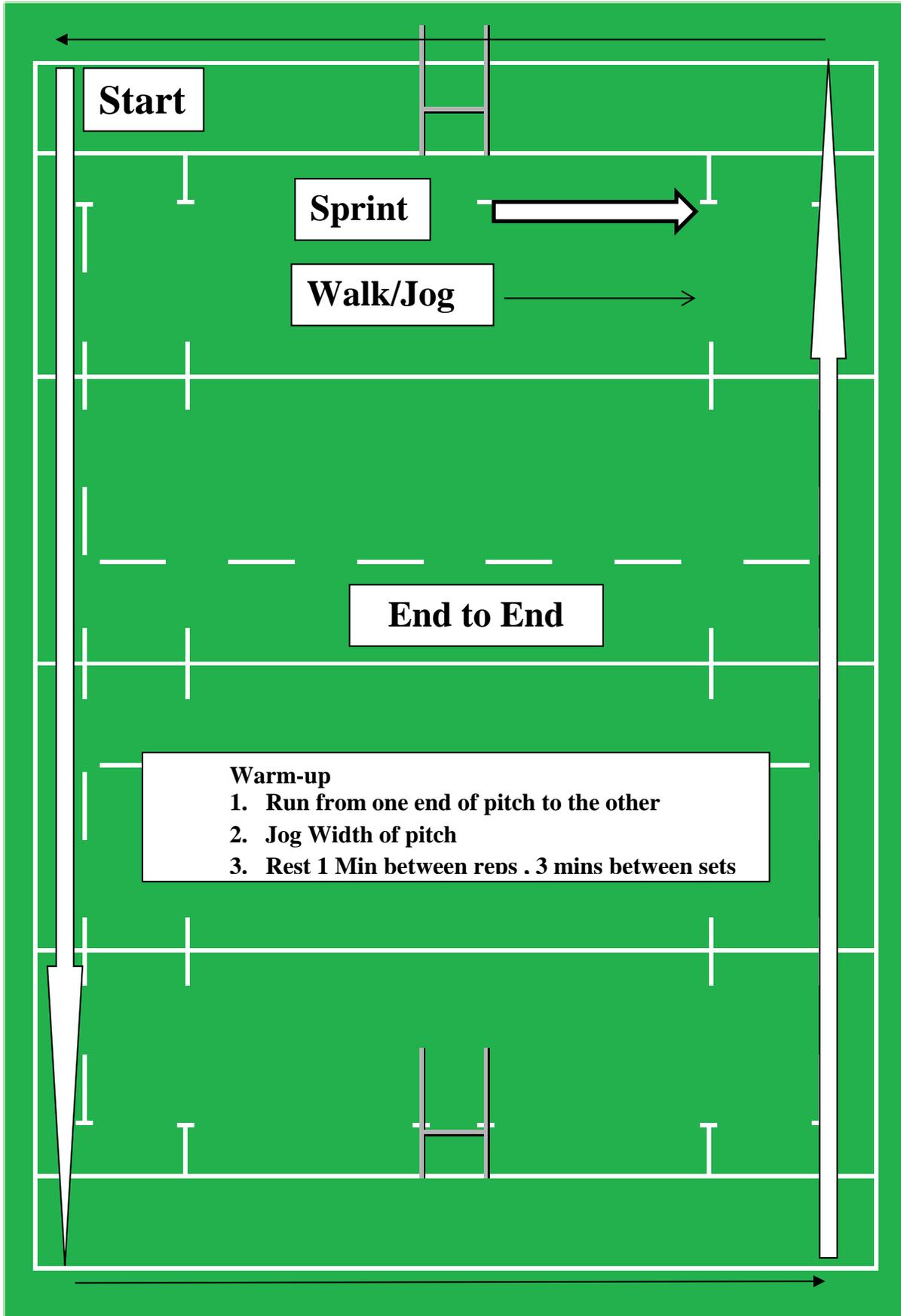


Shuttle Run

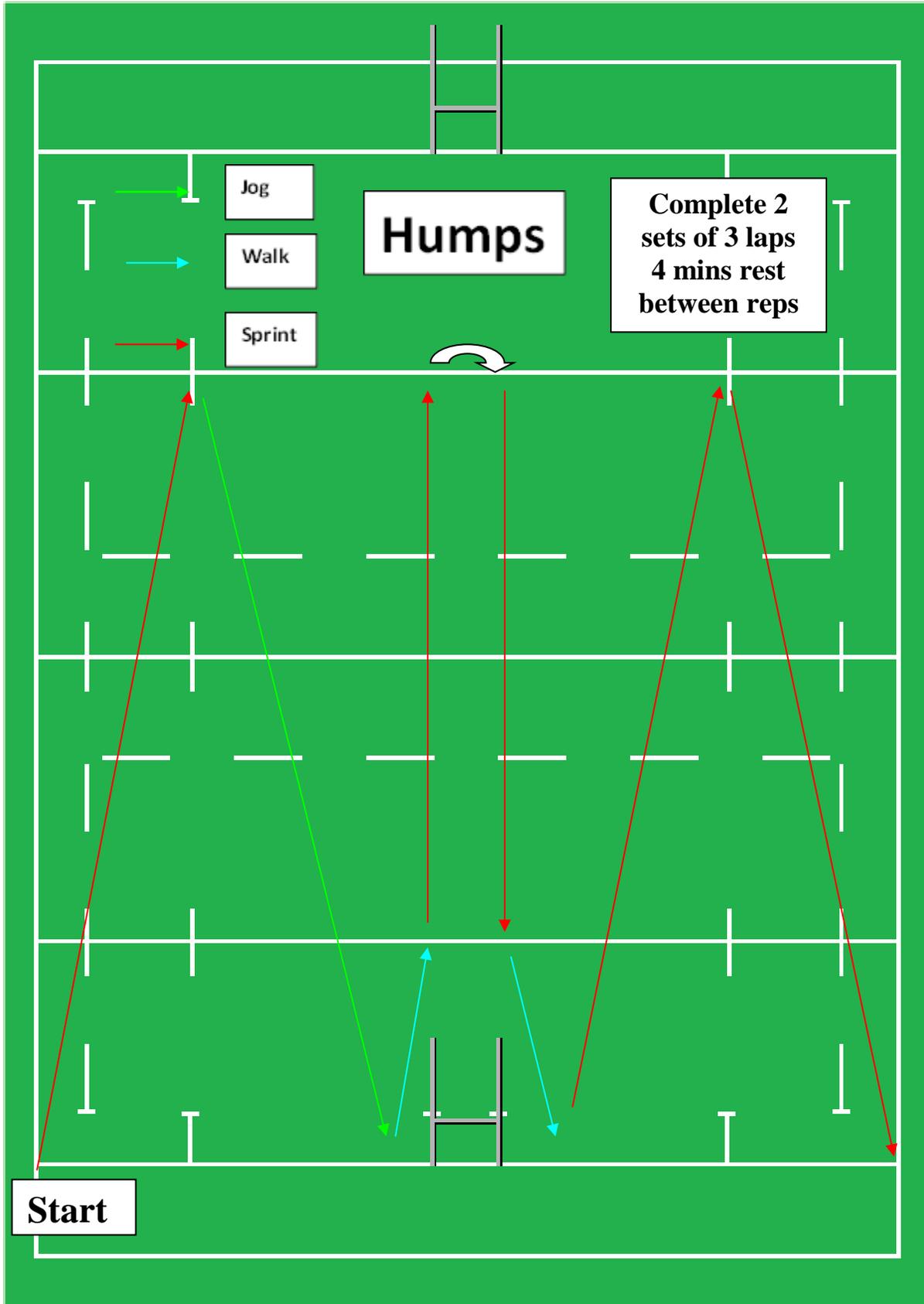


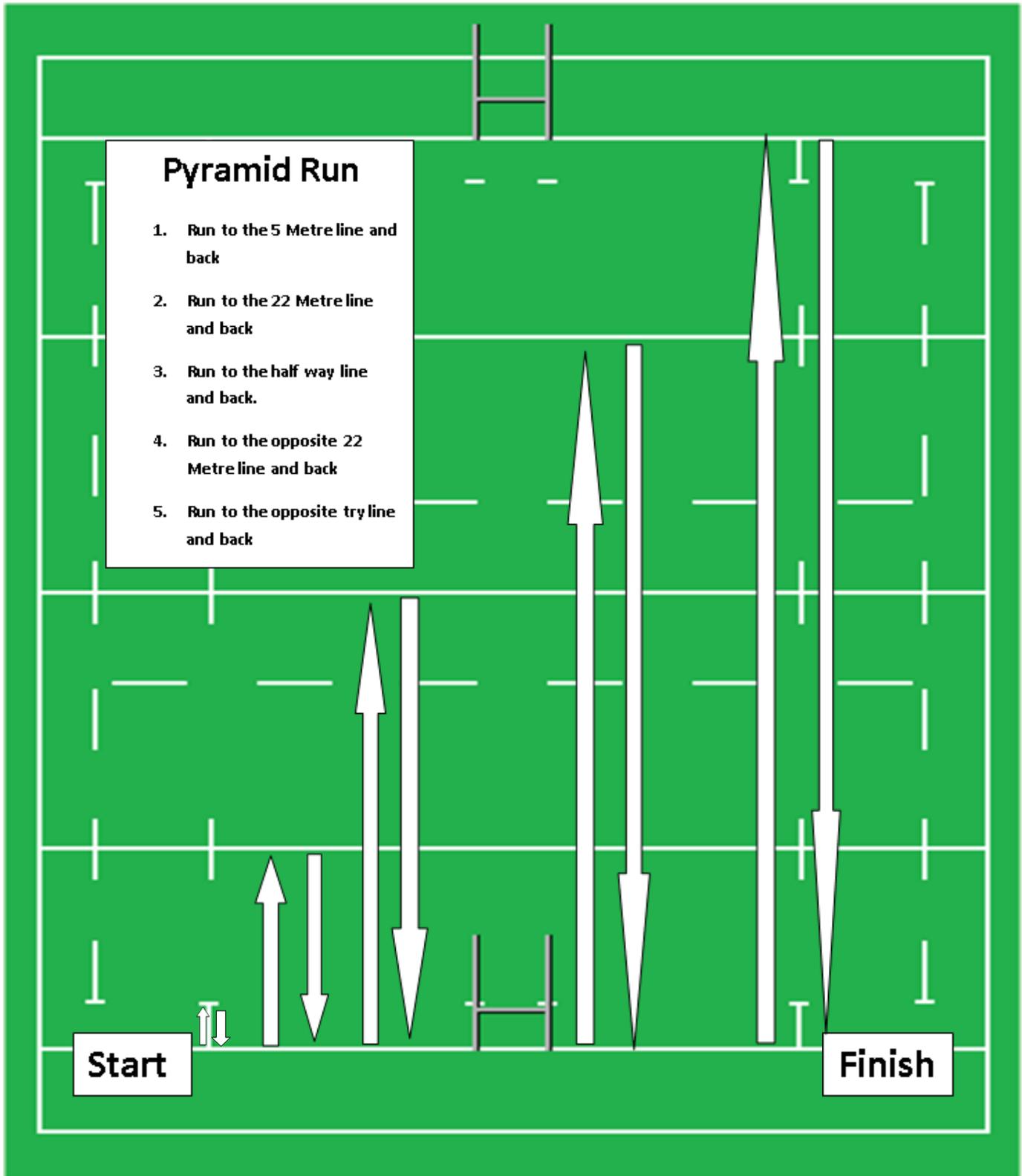
1. Place 6 cones out in a straight line 5 metres apart
2. Set iphone or stopwatch to 30 secs
3. Run to 5 m cone and back
4. Run to 10 m cone and back
5. Run to 15 m cone and back
6. Run to as many cones as you can and back in 30 secs
7. Rest 30 secs, repeat 6 more reps
8. Rest 5 mins and repeat required number of sets

Beginners 2 sets
Intermediate 3 sets
Advanced 3 to 4 sets



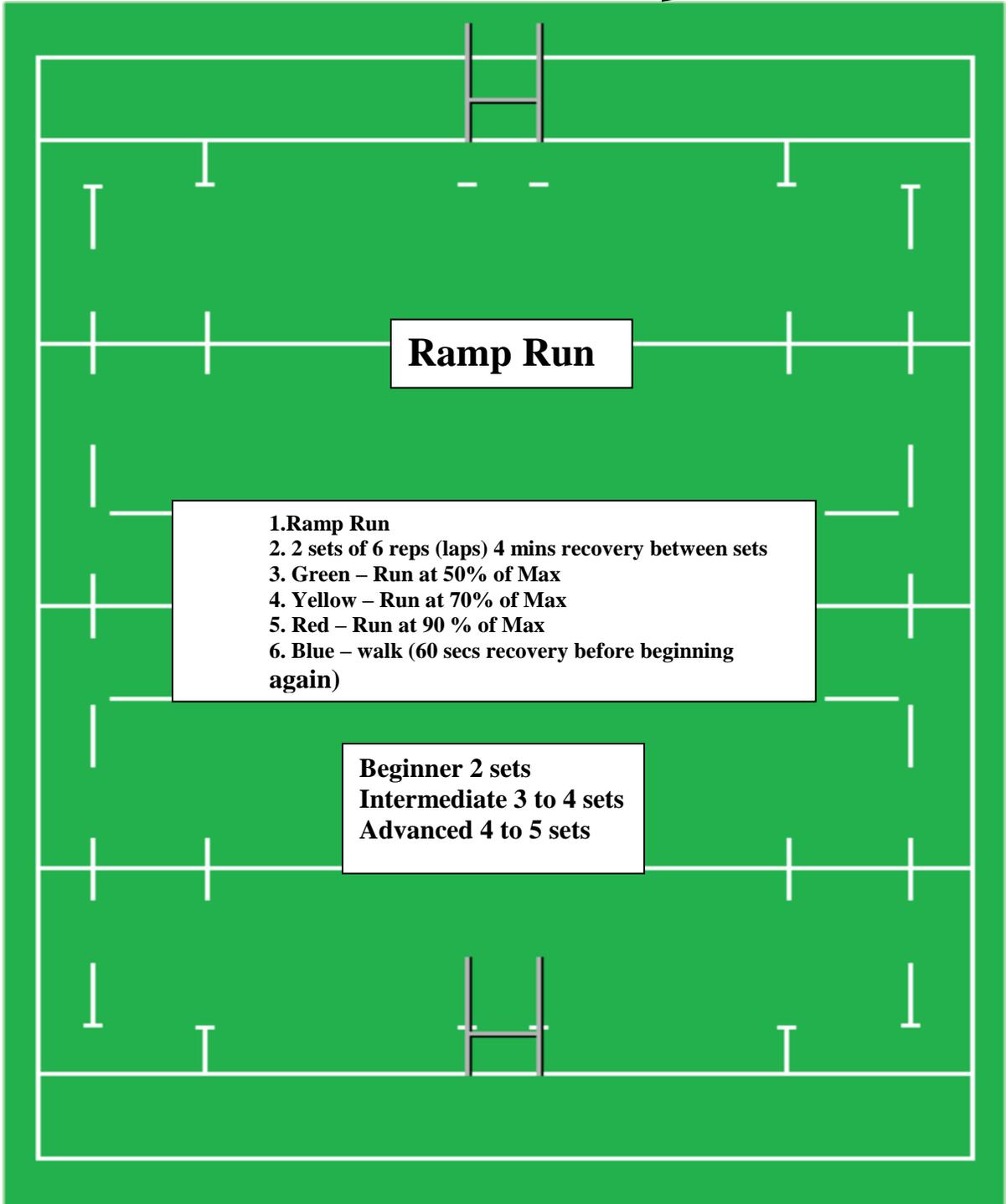
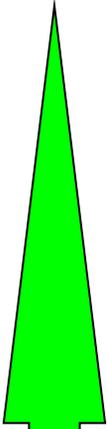
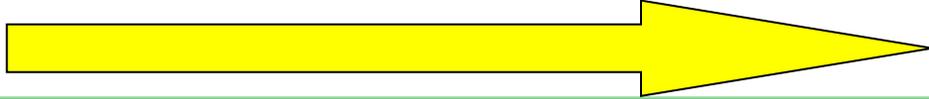






1. Warm-up: following protocol laid out in DVD
2. Perform sequence of runs (as shown above)

Beginners complete 4 reps with 3 mins rest between reps
Intermediate complete 6 reps with 2 mins rest between reps
Advanced/elite complete 8 reps with 2 mins rest between reps



Ramp Run

- 1. Ramp Run
- 2. 2 sets of 6 reps (laps) 4 mins recovery between sets
- 3. Green – Run at 50% of Max
- 4. Yellow – Run at 70% of Max
- 5. Red – Run at 90 % of Max
- 6. Blue – walk (60 secs recovery before beginning again)

Beginner 2 sets
Intermediate 3 to 4 sets
Advanced 4 to 5 sets

Start

1. Warm-up: following protocol laid out in DVD
2. Perform sequence of runs (as shown above)

Beginners complete 4 reps with 3 mins rest between reps
Intermediate complete 6 reps with 2 mins rest between reps
Advanced/elite complete 8 reps with 2 mins rest between reps

Run

Jog

Speed Endurance Twister

