

# Coaching Sprint Starts

- Block Starts
- Starting on a bend
- Crouch starts without blocks
- Standing Start
- After the gun

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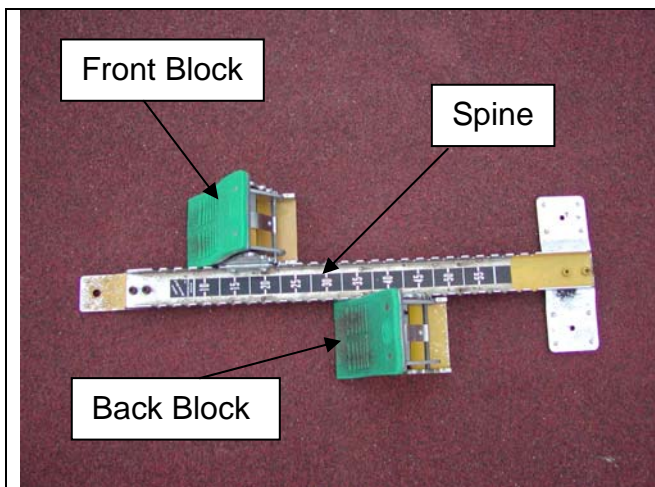
## **Introduction**

This simple instruction sheet will enable you to achieve a solid starting position whether starting in a straight line or on a bend and whether using blocks or not.

The instruction is designed to achieve a Medium or 'Neutral' starting position (see explanation of different positions at the end of this document). The 'Neutral' position is good for the majority of athletes but, as we all vary in shape and size, some adjustment may be needed to get the perfect position for you, however don't change the position straight away. Practice the set up and start and if after some time the position still does not feel right or comfortable ask you coach for an assessment and possible adjustment.



## Crouch start using blocks (as in 100m)

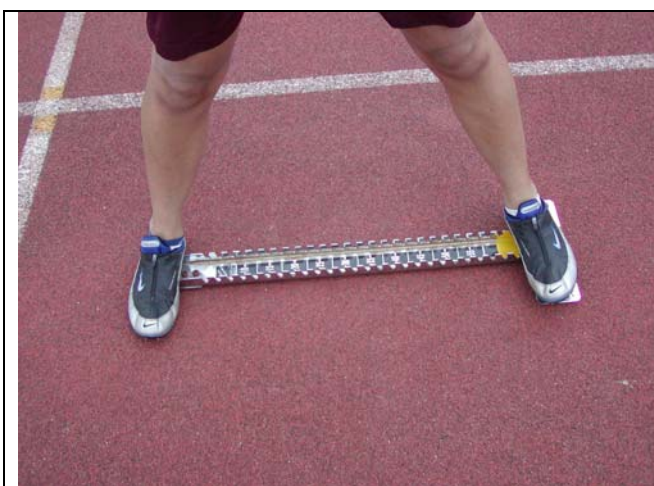


This is a Starting Block. It consists of three parts namely the Spine, Front Block and Back Block.



### Step 1.

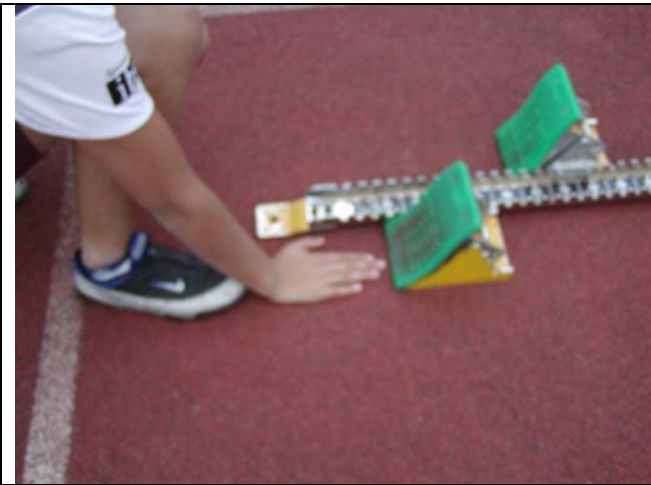
Place the Spine (without the blocks) in the centre of your lane (excluding start on bend) with the tip of the spine 1 foot length from the start line



### Step 2.

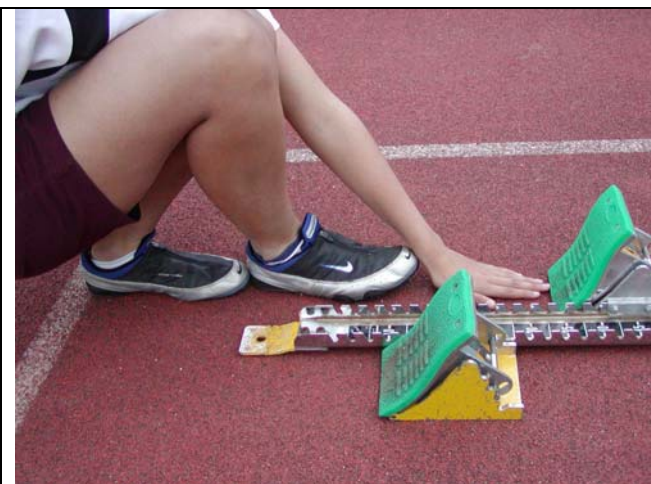
Make sure the spine is secure on the track by standing on the ends of the spine to bed the locking spikes into the track surface.

Before moving to Step 3 you will need to establish which foot will be on which block? Typically your kicking foot (the foot you use to kick a ball) will be the back foot but this is not always the case. Try both options and see which feels the most comfortable.



#### Step 3.

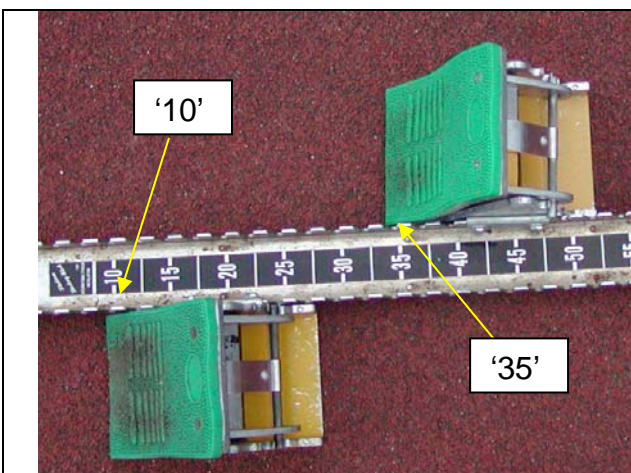
Place the Front Block on the Spine so that the leading edge of the Block is 1 foot & 1 hand away from the Start Line



#### Step 4.

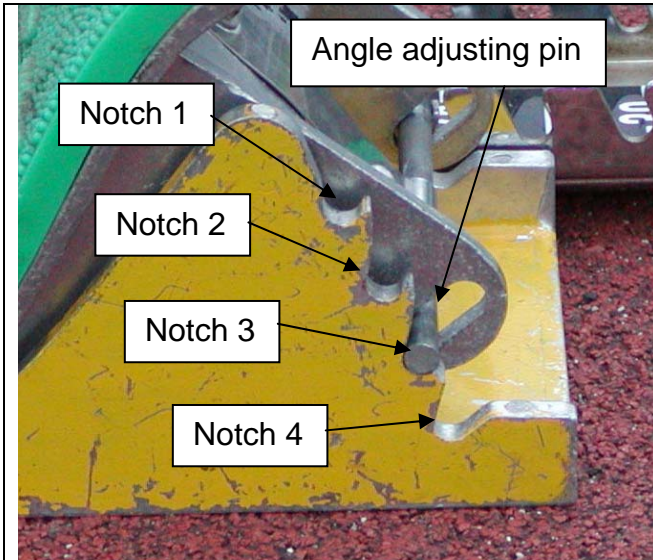
Place the Back Block on the Spine so that the leading edge of the Block is 2 feet & 1 hand away from the Start Line.

Another way of looking at this is that the front edges of the Front & Back Blocks are 1 foot apart.



Use the numbered lines in the centre of the spine to remember your set up. For example – in the photo the front edge of the Front Block is level with the number 10 and the front edge of the Back Block is level with the number 35. This way you can set your blocks up very quickly without having to remeasure each time.





On the Blocks themselves you will notice that each has 4 notches with which to adjust the angle of the block. The Angle Adjusting Pin on this Front Block photo is shown in Notch 3.



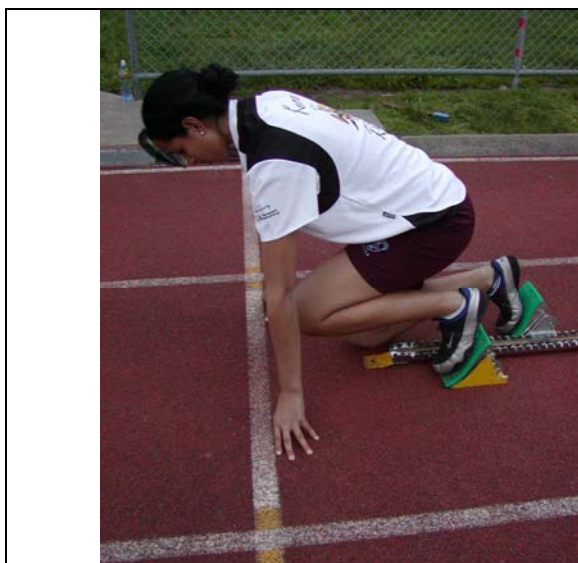
Step 5.

The Front Block should be set so that the Angle Adjusting Pin is in Notch 3 (3<sup>rd</sup> from the top)



Step 6.

The Back Block should be set so that the Angle Adjusting Pin is in Notch 2 (2<sup>nd</sup> from the top)



Step 7 (a)

You can now step into the block and assume the 'On Your Marks' position.

Hands form a high bridge with the thumb and first finger just short of the Start Line.

Arms straight up (90 degrees to track) with shoulders directly over start line

Feet in the blocks with just the very tip of the shoe touching the track



Step 7 (b)

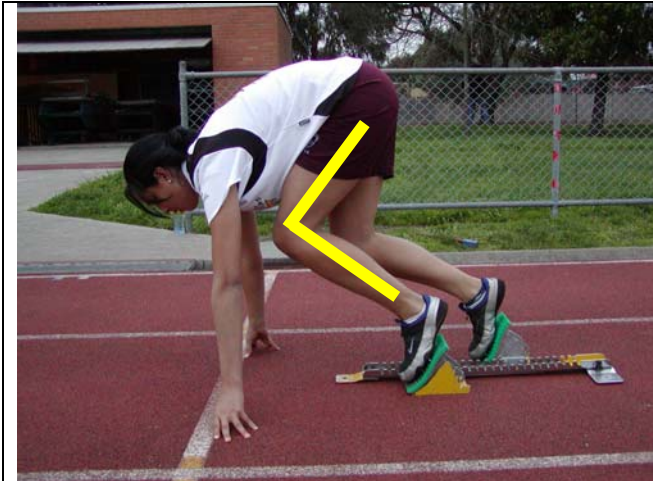
Arms should be slightly wider than Shoulder Width apart.

Shoulders back, head forward



A good way of checking your position at the 'On your Marks' position is to see if your Knee can clear, or just touch, the inside of your arms.



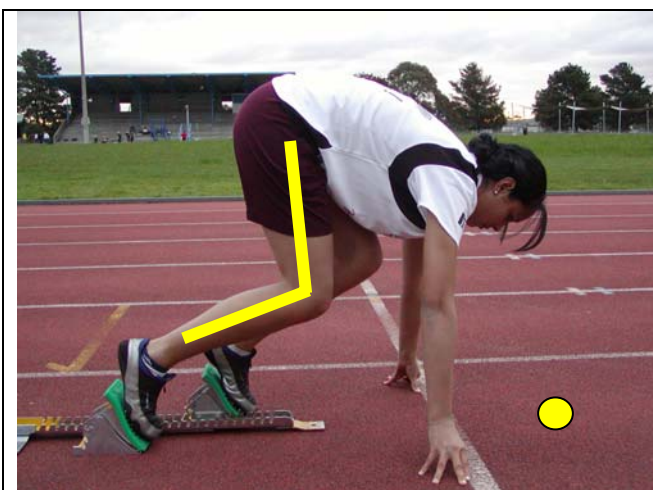


Step 8 (a).

On the command 'Set', purposely lift your hips until they are just higher than your shoulders. The front leg should form an approximate angle of 90 degrees

Shoulders still over the start line

Shoulders back, head forward



Step 8 (b)

The back leg should form an approximate angle of 120 degrees

Majority of weight is on front foot

Eyes are focused on track approximately 30cm in front of Start Line

Hold your breath



NOTE:

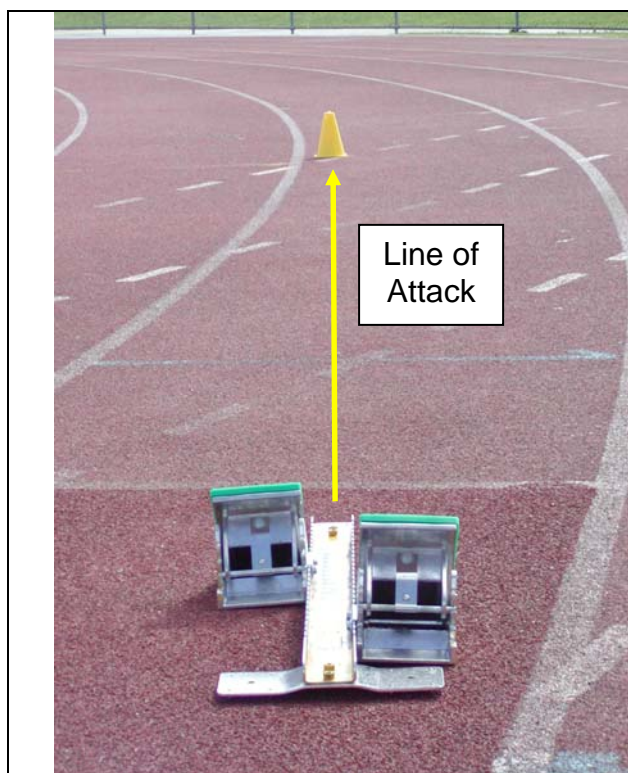
In the 'Set' position both feet must be fully back in the blocks with just the very tip of the shoe touching the track. Adjust the angle of the block if this is not the case.

The majority of your weight should be on the front foot.

## Starting on a bend (as in 200m)

Starting on a bend as in the 200m or 400m is slightly different than starting in a straight line as in the 100m. The athlete has to contend with the immediate curve of the track as well as the staggered positions of all competitors.

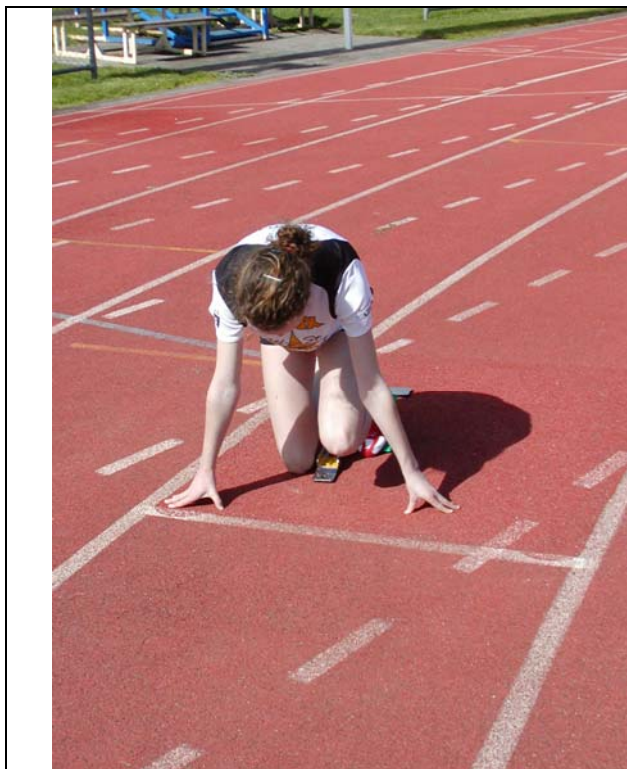
With a few simple adjustments to the block set up and starting procedure can help reduce the effect of these changes.



Ideally we want the athlete to run straight for as long as possible, at least until they are clear of the blocks and into their stride pattern.

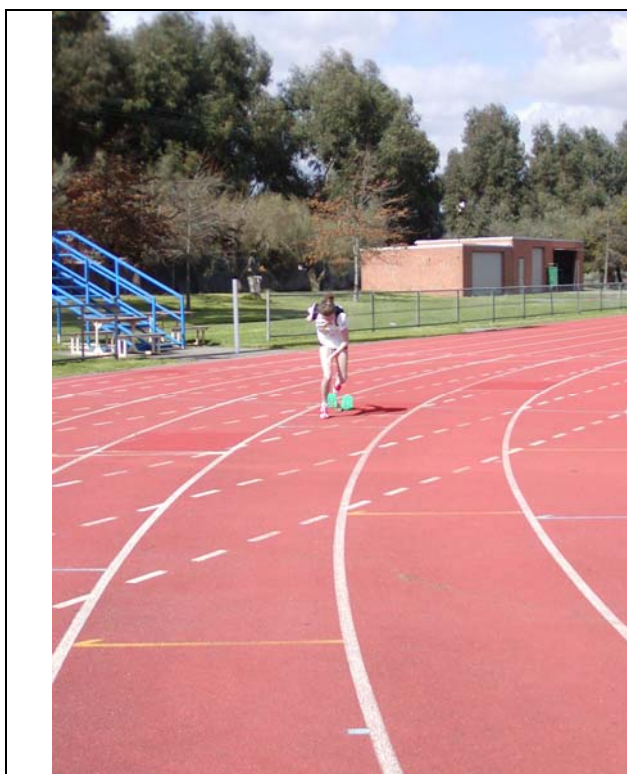
One way we can do this is by setting the blocks to the outside of the lane pointing at a tangent to the inside of the lane.

This will allow the athlete to run straight for the first 10-15m or so.



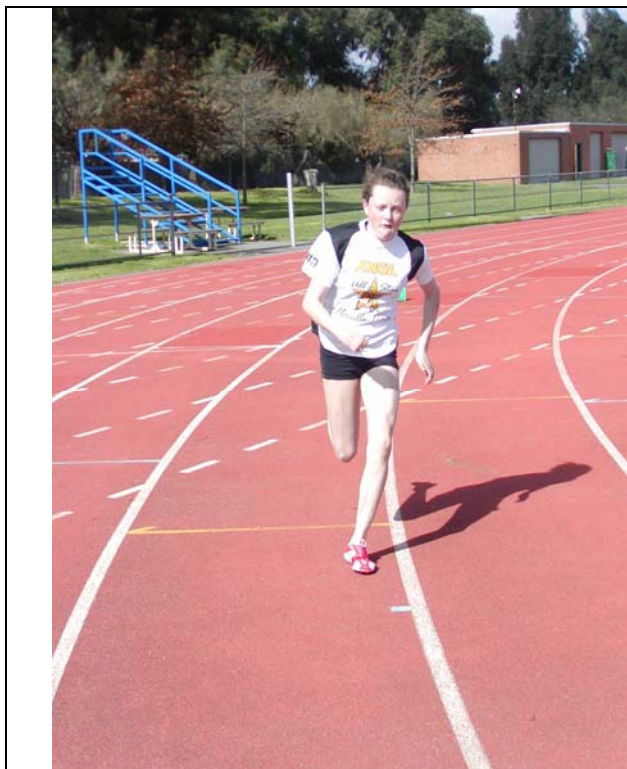
We also have to adjust the athlete's position in relation to the start line.

As the athlete is now at an angle to the start line, the inside hand has to move back so as to keep the body (shoulders) perpendicular to the line of attack.



The athlete leaves the blocks and can concentrate on running hard and fast in a straight line.

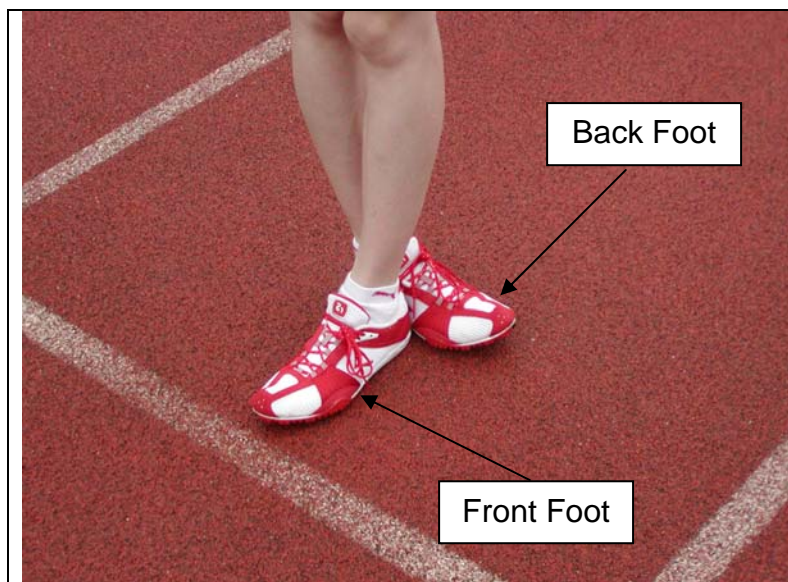




The athlete having reached the inside of the lane then runs the bend hard to the inside line so as to keep the running distance to a minimum.

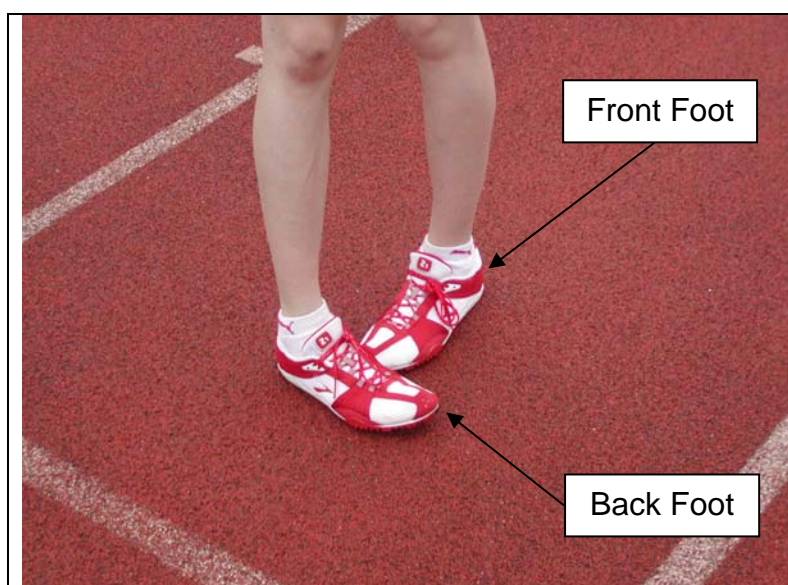
## Crouch Start without Blocks

A crouch start can still be an effective starting technique even without starting blocks. The setup is basically the same but requires a slightly different process to establish the front and back leg positions.



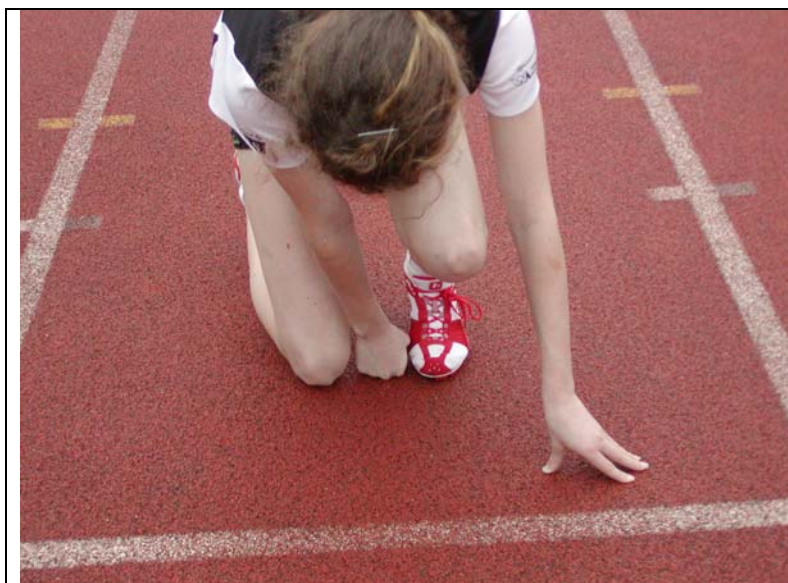
Start by placing the front foot in the middle of the lane with the athlete's front foot toe even with the start line.

Then place the back foot at 90 degrees to the front foot adjacent to the front foot heel.



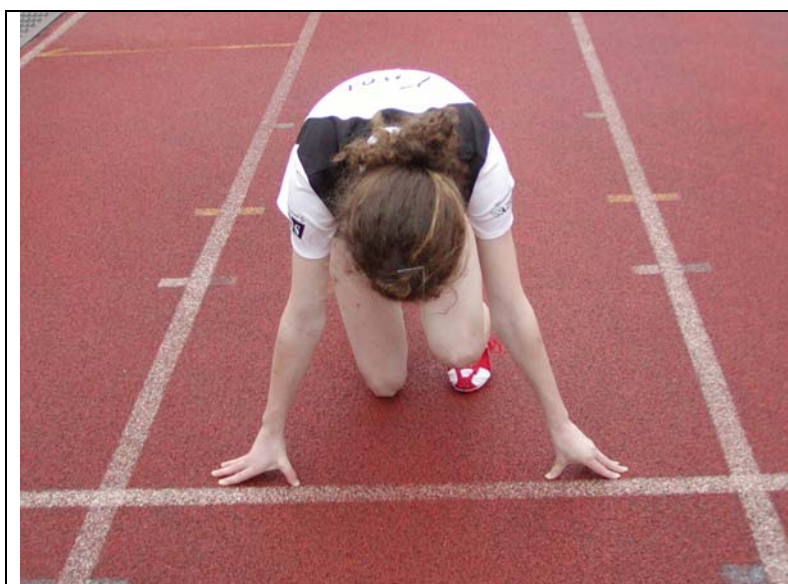
Leave the back foot where it is and bring the front foot behind the back foot so that the front foot toe is adjacent to the instep of the back foot.

This is the final position for the front foot.



Move the back leg such that the back leg knee is positioned on the track level with the front leg foot.

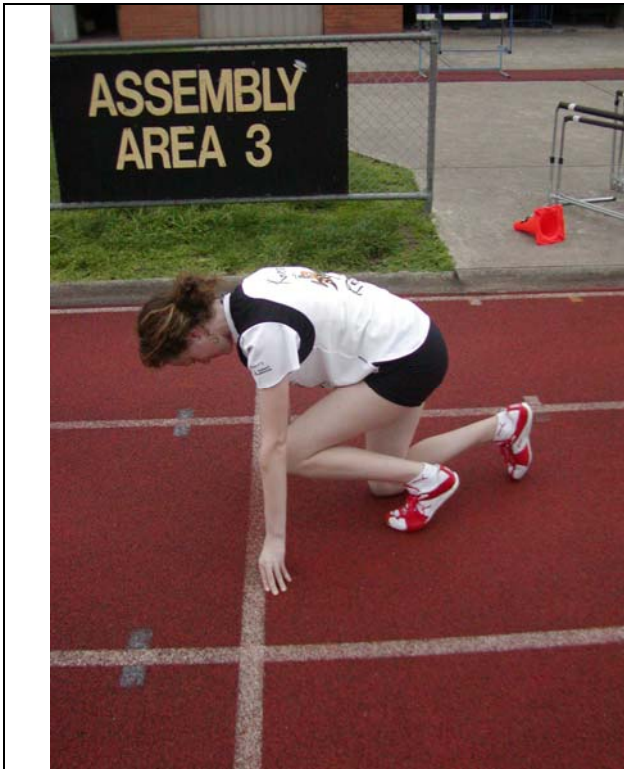
There should be a small gap between the front foot and back leg knee approximate in size to a clenched fist.



You can now assume the 'On Your Marks' position.

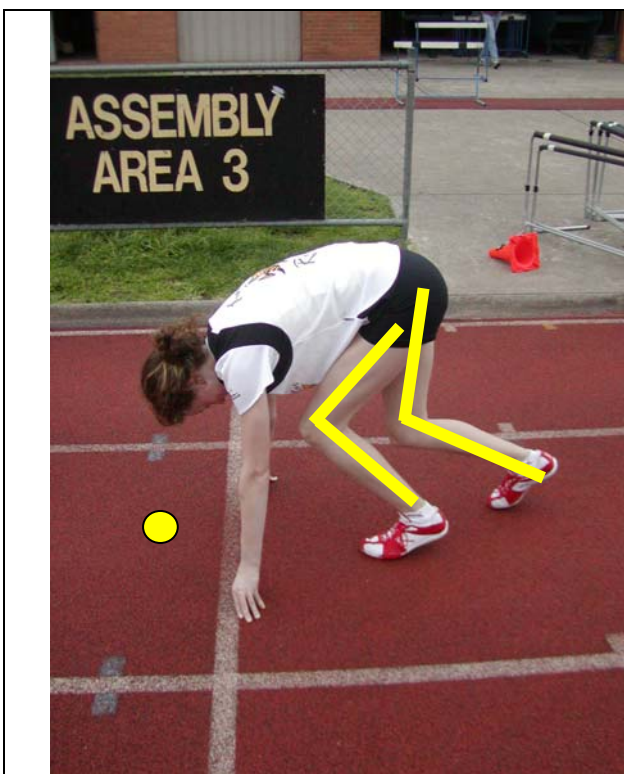
Arms on track behind the start line, slightly wider than shoulders





Hands form a high bridge with the thumb and first finger just short of the Start Line.

Arms straight up (90 degrees to track) with shoulders directly over start line



On the command 'Set', purposely lift your hips until they are just higher than your shoulders.

Shoulders still over the start line

Shoulders back, head forward

As for the crouch start with blocks the front leg will form an angle of approximately 90 degrees and the back leg an angle of approximately 120 degrees.

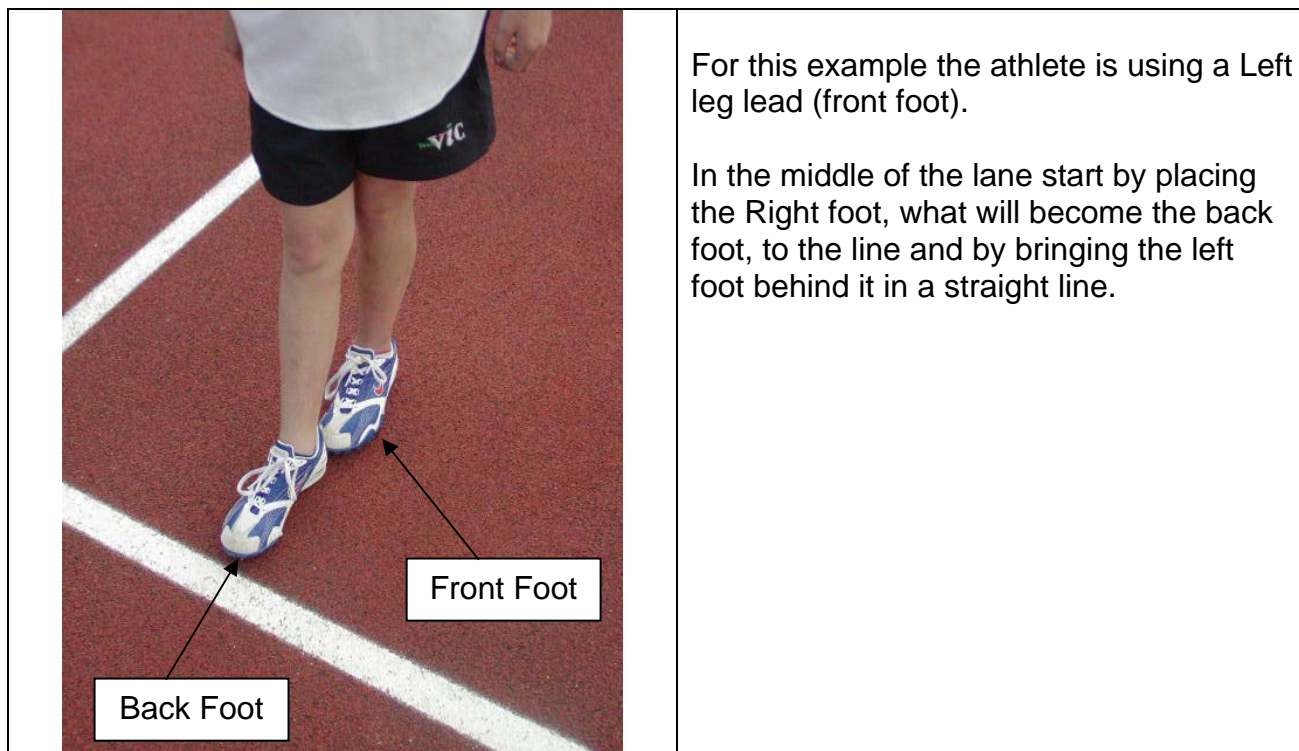
The majority of the athlete's weight is on the front foot.

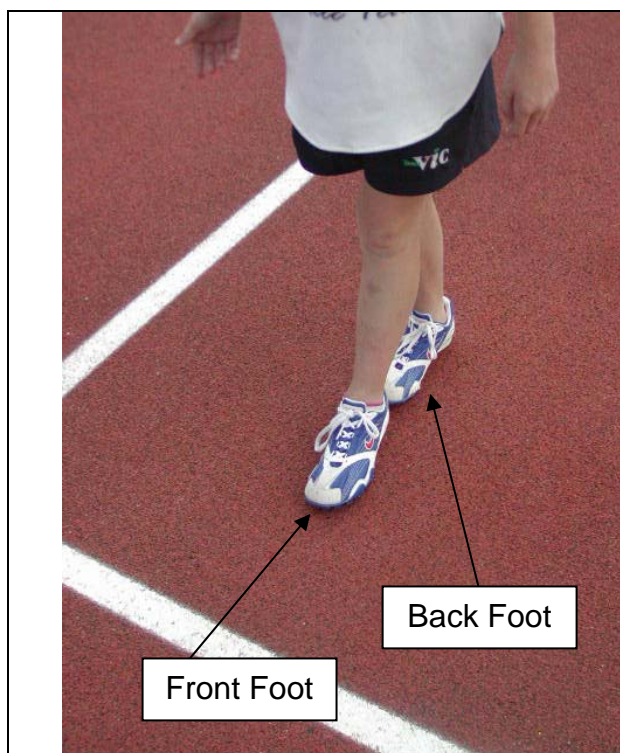
Eyes are focused on track approximately 30cm in front of Start Line

Hold your breath

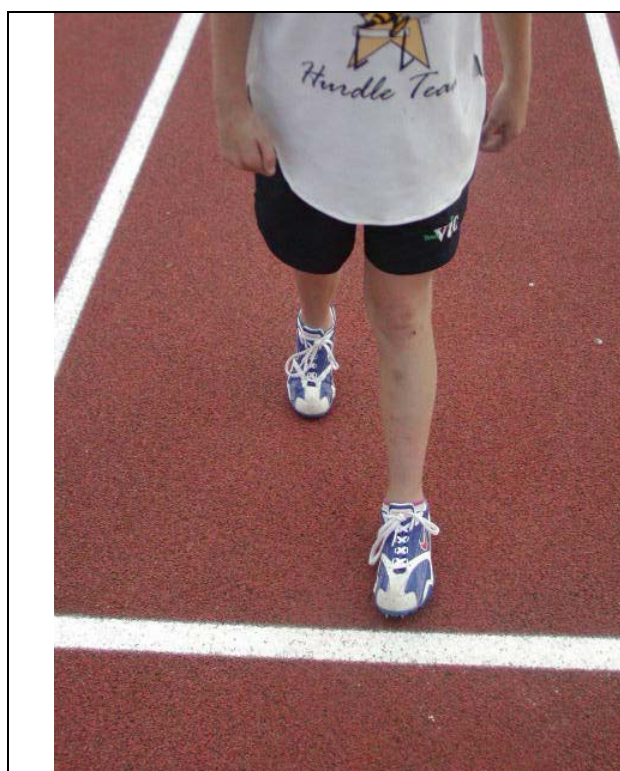
## Standing Start

For younger athletes or athletes starting in unlaned events a standing Start is required. The Standing Start setup has many similarities to a crouch start and is very effective if performed correctly.





Now bring the Right foot and place it behind the Left foot again in a straight line.



The Right foot remains in this position while the Left foot is moved up to the line with the toe just short of the line. Feet are approximately shoulder width apart.

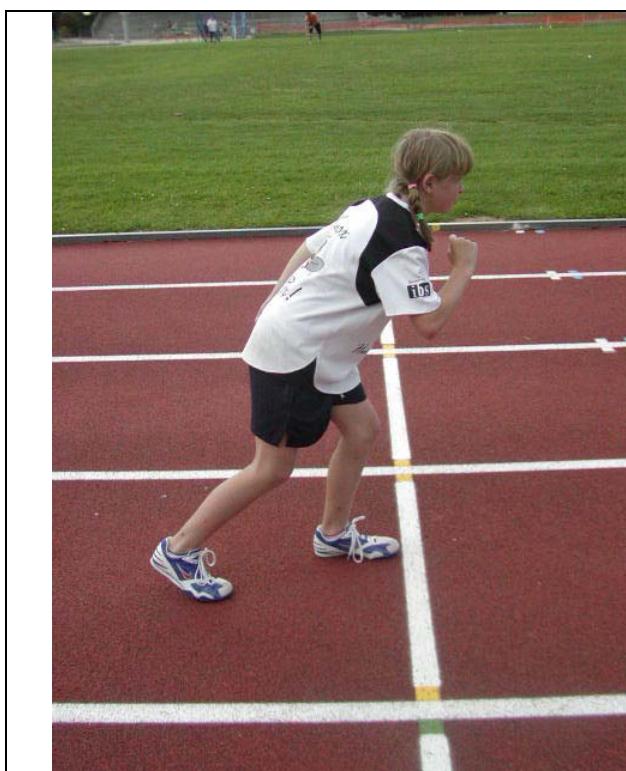
This is the foot position for the 'On Your Marks' command





**'On your Marks'**

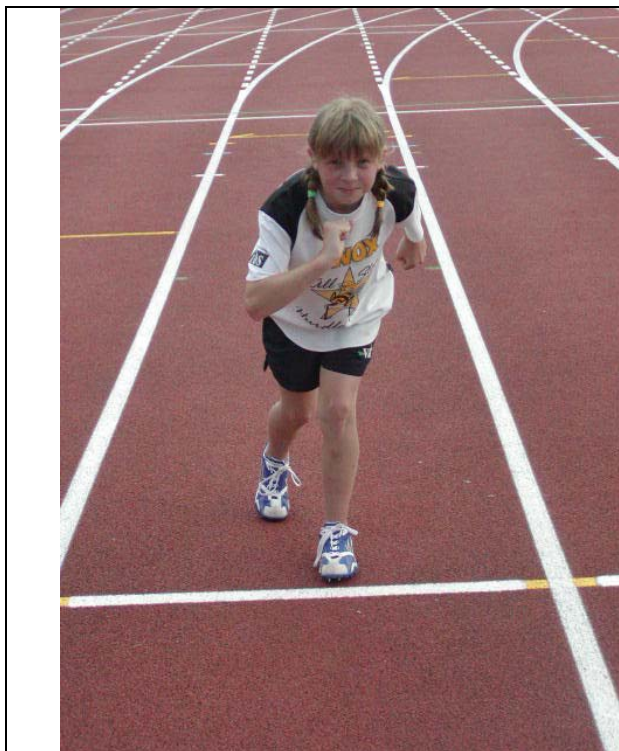
Athlete is relaxed. Opposite arm forward to front leg (left leg/right arm forward). Weight mainly on front foot.



**'Set'**

Weight is moved forward, lowered and concentrated on front leg. Back foot is mainly providing balance. Athlete holds their breath.

Check: Chin, Knee Toe – all in a row!



Athlete is focused on the finish line awaiting the gun.

On the 'bang' of the gun the athlete exhales and pushes hard on the front foot while driving the back foot through to a high knee.

The arms are used to drive the legs and should be kept bent at 90 degrees and moving straight forward/backward aside the athlete throughout the race.

A common problem with standing starts is 'stepping back' by the transfer of weight to the back foot on the 'bang'. The majority of the athletes weight should be focused and remain on the front foot throughout the start process.

## What happens after the Gun fires (Crouch Starts)?

### ***Bang!***

- Exhale
- Drive the arms hard
- Drive the back leg forward into a high knee action
- Extend the whole body so there is a straight line through the head, spine and extended rear leg - body approx. 45 to 60 degree angle to the ground
- Eyes Focused on the track 2 to 3 metres
- Keep low, relaxed and drive
- Run out of the blocks - do not step or jump out of the blocks

What does it look like when it all comes together?



### ***Acceleration Phase***

- Eyes focused on the track to keep low to allow the build up of speed
  - Forward lean of the whole body with a straight line through the head, spine and extended rear leg
  - Face and neck muscles relaxed (no tension)
  - Shoulders held back and relaxed, square in the lane at all times
  - Arms move with a smooth forward backward action - not across the body - drive back with elbows - hands move from approx. shoulder height to hips
-



- Elbows maintained at 90 degrees (angle between upper and lower arm)
- Hands Relaxed - fingers loosely curled - thumb uppermost
- Legs - fully extended rear leg pushing off the track with the toes - drive the leg forward with a high knee action with the knee pointing forward and with the heel striking under the backside (not the back of the backside as the knee is low and pointing down to the ground) - extend lower leg forward of knee (rear leg drive will propel the foot forward of the knee) with toes turned up - bring foot down in a claw action with a ball of foot/toe strike on the track vertically below the knee - pull the ground under you into a full rear leg extension - (elbow drive assisting the whole action)
- On the ball of foot/toes at all times - feet pointing forward straight down the lane
- Elbow drive commences just before rear leg drive
- Fast leg action, good stride length allowing continual acceleration
- Appearance of being smooth and relaxed but driving hard with elbows and legs
- The drive is maintained for approx. 15-20 metres and then the whole body slowly comes into a high tall action

### ***Stride Phase***

- Smooth transitions from acceleration phase to stride phase
- Eyes focused at the end of the lane - tunnel vision
- Head in line with the spine - held high and square
- Face relaxed - no tension - mouth relaxed
- Chin down, not out
- Shoulders held down (long neck), back (not hunched), relaxed and square in the lane at all times
- Smooth forward backward action of the arms- not across the body - drive back with elbows - brush vest with elbows - hands move from shoulder height to hips
- Elbows held at 90 degrees at all times (angle between upper arm and lower arm)
- Hands relaxed - fingers loosely curled - thumb uppermost
- Hips tucked under - slight forward rotation of the hip with forward leg drive to help extend the stride

- Legs - fully extended rear leg pushing off the track with the toes - drive the leg forward with a high knee action with the knee pointing forward and with the heel striking under the backside (not the back of the backside as the knee is low and pointing down to the ground) - extend lower leg forward of knee (rear leg drive will propel the foot forward of the knee) with toes turned up - bring foot down in a claw action with a ball of foot/toe strike on the track vertically below the knee - pull the ground under you into a full rear leg extension - (elbow drive assisting the whole action)
- On the ball of foot/toes with the feet pointing forward straight down the lane
- No signs of straining or tension in the face, neck and shoulders
- Appearance of being Tall , Relaxed and Smooth with maximum Drive

### ***Lift Phase***

- As the Stride Phase but with emphasis on:
  - High knee action (prancing)
  - Leg action fast and light as if running on hot surface
  - Fast arms - more urgency
  - Hands slightly higher at the front

### ***General Notes***

Monitor your technique looking for:

#### ***a Tall action***

This means erect, running on the ball of foot/toes (not heels) with full extension of the back, hips and legs as opposed to 'sitting down' when running

#### ***a Relaxed action***

This means move easily, as opposed to tensing and 'working hard' to move. Let the movements of running flow. Keep the hands relaxed, the shoulders low and the arm swing rhythmically by the sides.

#### ***a Smooth action***

This means float across the top of the ground. All motion should be forward, not up and down. Leg action should be efficient and rhythmic. The legs should move easily under the body like a wheel rolling smoothly along.

#### ***Drive***

This means push from an extended rear leg, rear elbow drive with a high forward knee drive followed by a strike and claw foot action just behind the body's centre of gravity.

## **Types of sprint starts**

There are three types of sprint starts:

**Bunch or Bullet start** - The toes of the rear foot are approximately level with the heel of the front foot and both feet are placed well back from the starting line.

**Medium (or Neutral) start** - the knee of the rear leg is placed opposite a point in the front half of the front foot.

**Elongated start** - the knee of the rear leg is level with or slightly behind the heel of the front foot.

The medium or Neutral start is the preferred method as it offers the most advantage to the sprinter. Compared to the other two starts it allows the sprinter to exert a higher force against the blocks for the longest practicable time which in turn produces the maximum impulse so that the athlete leaves the blocks with the greatest possible velocity.

## **Acknowledgments**

Thanks to Olivia Goder, Georgia Orrock and Kristy Stratton from Knox LAC for agreeing to act as the models