RJT Workshops Week 3

Long Jump & Hurdles
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**Long Jump**

**AIM:** The goal in the horizontal jumping events is to maximise the measured distance of an athlete’s jump. Distance and height of flight through the air are determined similarly to the high jump: (a) *velocity at take-off*, (b) *angle at take-off* and (c) *the height of the centre of mass at take-off*. The velocity and take off angle are generally the most important factors.

The movement of the long jump can be broken down into FOUR main phases:

1) **Approach**
2) **Take off**
3) **Flight**
4) **Landing**

In the long jump the final result is largely determined by the level of horizontal velocity (speed), and the objective is to get the athlete as close as possible to their maximum running speed prior to take-off.

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**Long Jump – Whole Sequence**

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**Phase Description**

- In the approach phase the jumper accelerates to maximum controllable speed.
- In the take off phase the jumper generates vertical velocity and minimises the loss of horizontal velocity.
- In the flight phase the jumper prepares for landing. Three different techniques can be used: sail, hang and high-kick.
- In the landing phase the jumper maximises the potential distance of the flight path and minimises the loss of distance at the touchdown.
Teaching Progression of Long Jump

Standing Jump Into The Pit

Aim: To give the athletes confidence in safely landing in the pit. To teach a safe two-foot landing. To teach the athletes how to use their arms to improve the distance of the jump.

Set Up: The athletes line up in groups along the side of the pit behind ground markers. A hoop can be placed at the front of each line to designate where the athletes must jump from.

Activity: The athletes perform a standing long jump into the sand pit. They briefly pause in their landing position, then quickly move out the way to allow the next person in line to safely jump.

- Teach the athletes to take off from two feet and land on two feet.
- Teach the athletes to bend their legs and swing their arms back when preparing to take off; to “stretch out” whilst in the air; and to “land like a frog” with bent legs in the sandpit. A simple coaching cue is: “Bend, stretch, bend”.
- Instruct the athletes to swing their arms forward and up during take-off. Asking them to clap their hands above their heads whilst in the air can be a fun way to teach this movement. Alternatively, ask them to imagine that they are “jumping up and swinging on monkey bars” or “jumping up to swing on a trapeze“.
- Teach the athletes to land with their feet close together and at the same time. (“Make one noise, not two when you land.”)
- Watch for athletes who land with straight, stiff legs in the sandpit, or bend forward at just the hips, rather than at the knees. Encourage a “head up – bottom down” landing rather than a “head down – bottom up landing”. Asking them to “make hand-prints in the sand” next to their feet or to “grab the sand” near their feet is also effective in helping to achieve a more correct landing position.

NOTE:
Ensure that the athletes do not jump until you have given the signal. Try to keep the group moving through quickly, but make sure that the pit is clear before you give the signal for the next athletes to have their turn.

**Skill Extensions:**
Draw a line in the sand that the athletes have to attempt to jump past (Cue: “Jump the River”).
A progression is to perform a standing long jump off one foot, with a two-foot landing (see image below). This can be a good (but not vital) skill link to the next activity.

![Standing long jump with a single-legged takeoff.](image)

**Jump into the Pit from a Short Approach – One Foot to Two Feet**

**Aim:** To introduce the basic long jump action using a one-foot take-off and two-feet landing.

**Set Up:** Same as standing long jump, but the athletes line up further back from the edge of the pit to allow for a run-up (3 – 5 strides approx.).

**Activity:** On the coach’s signal, the athletes jog/run at an easy pace towards the edge of the pit and jump by taking off from one foot and landing on two feet in the sand. The coach might instruct the athletes to begin with a walking approach, particularly with younger or beginner athletes.

- Ensure that the athletes take-off from one foot and land with two feet together in the pit.
- Watch for athletes who take-off from two feet.
- Encourage the athletes to use the same landing technique as used for the standing long jump activity – “land like a frog”.
- Watch for athletes who simply step or run into the pit and continue running through the sand. Instructing the athletes to “land like a frog” and to come to a complete stop on landing can help to fix this problem.
• Once athletes master a one-foot-take-off-two-feet-landing technique, remind them of the use of their arms. Asking them to pretend to run, jump and swing on the “monkey bars” or “trapeze” then to land “like a frog” and “make hand-prints” or “grab the sand” will help create a good basic long jump technique.

• If the athletes are jumping very flat, barely getting off the ground, ask them to “spring” or “pop” up and “push off their toes” when they take-off.

• An image demonstrating a long jump take-off position with arms extended above the head.

Skill Extensions:

• The athletes need to learn to take off accurately from a designated take-off area. Continue with the above activity, but ask the athletes to run in and take off from one foot placed in a hoop positioned at the edge of the pit. Be prepared that this can confuse some athletes who have had little long jump experience. Watch for a variety of errors such as taking off from two feet in the hoop, skipping into the hoop, jumping/stepping over the hoop, etc. Reverting to a walking approach may be required for some athletes.

The next progression can be done with a designated taker-off area or without:

• Draw a line in the sand that the athletes need to attempt to jump past i.e. “Jump the River” or two lines that the athletes need to land between i.e. “Jump into the River”.

• Place a low object such as a mini hurdle at the edge of the pit that the athletes must attempt to jump over.
### Long Jump for Distance from a Longer Approach

**Aim:** To allow the athletes to attempt the full long jumping action from a longer approach run.

**Set Up:** Same as in short approach work above.

**Activity:** Coaches can use the same activities as above. The emphasis when working with development athletes should be on maintaining their speed on a longer run up, avoiding deceleration into the board or take off area. Instruct athletes to run to the board faster and with more aggression, concentrating on the last 3 strides being the fastest of all. The last 2 strides in particular of a long jump approach should be as fast and snappy as possible. Listening for audible quickness of the athletes’ ground contacts can be great way to determine whether the athlete is doing this correctly. The image below shows a vocal cue which can be used in the last 5 strides of the approach:

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**Skill extensions:**

- To teach athletes to jump for distance place a low, safe object such as a mini hurdle at the edge of the pit for the athletes to jump over. Alternatively, have two coaches/athletes hold a flexible elastic high jump bar at an appropriate height for the athletes to jump over.

- Knee Drive drills: Emphasise the importance of driving the knee of the free leg UPWARDS on take-off. This should be an aggressive SWING or DRIVE UPWARDS of the knee. Telemark/Genuflect style jumps (i.e. landing in a kneeling position) in to the pit are an excellent way to train this skill (see image below).

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- Ensure that the athlete is not looking down at the board on take-off. This can be done by holding an object (e.g. handle of rake) out and high over the middle of the pit. Alternatively get the athletes to concentrate on an object.
beyond the pit (e.g. tree tops far in the distance) as they approach the board.

- Finally ensure that athletes push and extend hips forwards when in the air and at take-off. This can be emphasised again by an external cue of using a pool noodle or foam pipe insulation in the manner seen in the image below.

![Image](image.png)

**NOTE:** The easiest and most effective technique to introduce to younger and developmental athletes is the ‘Hang’ technique. All the drills and activities mentioned previously use the hang technique.
Teaching The Long Jump Run-Up

Step 1:

Firstly, the coach needs to have an idea of what is an appropriate length run-up for a young athlete. This can be done by matching their age with a recommended number of strides in their run-up. As an approximate starting guide:

- 10 years = 10-11 strides
- 11 years = 10-12 strides
- 12 years = 11-13 strides
- 13 years = 12-14 strides
- 14 years = 13-15 strides
- 15 years = 14-16 strides
- 16 years = 15-17 strides
- 17 years = 15-21 strides

NOTE: If you choose to work off an ODD or EVEN number of strides ensure you stick with working with one or the other. This will become important later and will reduce the confusion over which leg to start from, especially with younger athletes.

Step 2:

Find out which foot the athlete jumps off. Is it their left or right foot that hits the board? This is their “take-off” or “preferred” leg.

Step 3:

Ask the athlete to show you how they like to stand at the start of their run-up. Is their take-off foot forward or back? If it is forward, the athlete will need to take an even number of steps in their run-up to ensure that this foot hits the board. If it is back, they will need to take an odd number of steps in their run-up.

(TIP: For athletes who “don’t know” which foot they prefer forward at the start of a long jump run-up ask them to show you a standing “On Your Marks” racing position. The foot positioning that they use is generally how they will begin their long jump run-up).
**Step 4:**

Ask the athlete to stand on the runway with their back to the sand pit and with the heel of their front foot on the take-off board foul line. They should stand exactly as they would to begin a long jump run-up. The athlete then runs along the runway, away from the pit, and the coach counts their strides and places a marker (e.g. some tape) where the “take-off” (e.g.13th) stride falls.

Repeat the above three times (five times if possible) with adequate rest between. You will finish with 3 or 5 markers next to the runway, depending on the number of times you repeat the exercise.

Leave the middle of the 3 or 5 markers in place and remove the others. The remaining marker is where the athlete can begin to practice their run-up from.

**TIP:** Counting the athlete’s run-up steps - To minimise mistakes with the coach counting every stride, the coach can instead count every 2^nd foot contact (i.e. 1, 3, 5, 7, 9 etc.).

**Step 5:**

Allow now the athlete to “run through” the board from their mark. Stand at the board and observe where the athlete takes off from. Does the take-off foot strike behind or in front of the board? Is it perfect? Get the athlete to repeat this (with adequate recovery) 3-5 times. Adjust the run-up according to what is observed i.e. If the athlete is constantly 1 foots length over the board, the coach should recommend that the athlete now moves their mark backwards the same distance.

**Other Long Jump Drills**

- Hopping and bounding (both single and double leg) are excellent ways to build strength and power for long jump as well as other athletics events. Ensure they are conducted on a grass or soft surface and limit the number of hops/ground contacts in each session.
• The use of boxes (both low and high) is a good way to coach long jump technique – the **flight** and **landing** phases in particular. Both lower and higher boxes give athletes a chance to feel what it’s like to ‘Fly’ through the air. It can also allow athletes more time to land with both feet together as they have more time to correct their body position in the air.

• When jumping from boxes safety is TOP priority. They must be fit for purpose, and at an appropriate height to the athlete’s age and ability. The coach must ensure that the boxes don’t move or slip when the athlete is taking off or jumping.

**TIP:** All the above information is a guideline for introducing and improving at the LJ. Be inventive, mix up different drills and games involving both jumping and running. Tailor training activities to the athletes that you coach and what works best for them. Don’t be afraid to try something new, once it is safe and suitable to the event.
Hurdles

**AIM:** Similar to the sprints section detailed in Week 1 of the RJT workshops, the fundamental goal of the hurdling events is to maximise average running speed over the distance of the race. In the hurdles there are a set number of barriers to contend with depending on the race distance. Athletes must MINIMISE the amount of time spent in the air while clearing the hurdles and try to avoid hitting hurdles or other technical flaws which will cause a loss in momentum.

The sprint hurdles comprise of TWO main elements:

1) **Sprinting between the hurdles**
2) **Hurdle clearance** (which can be divided into take off, clearance and landing phases).

**Safety Suggestion:**
Use hurdles that suit the age and ability of the athletes (i.e. suitable weight/material). Use light plastic hurdles, mini hurdles, polystyrene foam hurdles etc. to build up athletes’ confidence and competence before progressing to competition style hurdles. Avoid using competition heights too frequently in training until technique is honed and mastered. Hurdlers often train using lower height hurdles and reduced distances between barriers – this allows for greater running speed between the hurdles and minimises the potential for collisions with barriers.
Running over low hurdles at competition spacing’s

Aim:
- To teach a smooth, uninterrupted running action over low obstacles
- To introduce the concept of the lead leg
- To teach the basic stride pattern between the hurdles

Set Up: Mark a starting line with cones and set up two flights of mini hurdles (or other low objects) placed at the correct competition distance for the age group. Place cones on the ground where the third hurdle should be as a finish line.

Activity: From a standing start, athletes are asked to run fast from the start line, over the obstacles and through the finish line.

- Emphasise running fast with a smooth action and not ‘slowing down’ before or after the hurdles.
- Emphasise that clearing the hurdles should not interrupt the running action. No ‘jumping’ the hurdles.
- Tell the athletes to maintain their speed until past the finish line.
- Allow the athletes to hurdle with whatever lead and trail leg action comes naturally.

Skill extension 1: After several run-throughs, introduce the athletes to the term ‘lead leg’. To help gain awareness of their lead leg, ask athletes to note whether they are leading with the same leg over each hurdle. Also introduce the basic ‘straight up and down’ lead leg action, which should be easy to achieve over a low obstacle. The athletes may need to practice this technique a few times on the spot. Make sure they practice on both legs.

Repeat the first activity over the mini hurdles once or twice. Each time ask the athletes if they used the same lead leg or alternated.

Skill extension 2: Introduce the concept stride pattern. Explain that three or five strides (an odd number) will result in using the same lead-leg; using four strides (an even number) will mean that the lead-leg will alternate (This may need a walk-through demonstration from the coach). Competition-aged athletes
generally don’t require more than five strides to cover the distance between hurdles.
Inform the athletes that it is okay to alternate their lead leg. A three-stride rhythm (leading with the same leg) is the ideal scenario, however, learning to run fast and maintain speed is more important in the early stages of learning the event.

Repeat the initial drill two more times, applying the additional information. Ask the athletes how many strides they took between the hurdles (They may need help from the coach’s or an observer to determine this).

**NOTE:** Many young athletes are very one-side dominant when hurdling, preferring to lead only with either their left or right leg. This can cause stuttering and hesitation between the hurdles and the athlete slowing down in order to use their preferred lead leg. Athletes need to be encouraged to lead with both legs - this can be introduced from the beginning with low hurdle drills repeated on both sides of the body. Being proficient in hurdling off either leg is also important for overall athlete development and leaves the athletes better prepared for long hurdles (250, 300, 400mH) and the steeplechase if they chose to switch event as they progress.

**START LINE TO THE FIRST HURDLE**

Athletes need to be able to run fast, aggressively, and without hesitation, to and across the first hurdle.

Many young athletes slow down, hesitate, and stutter, trying to ensure that they hurdle with their preferred lead leg. Alternatively, they clear the hurdle awkwardly with their non-preferred leg, often landing off balance or hitting the hurdle. This then affects their ability to cover the distance to the second hurdle efficiently.

This can be an ongoing issue for young athletes and there are multiple solutions – bigger strides, smaller strides, faster strides, however, there is one simple and very effective solution:
Switch the foot they have forward at the start.

If an athlete is continuously “wrong-footed” at the first hurdle, swapping foot positions at the start should fix the problem immediately.

When successful, this simple switch can help an athlete who has lacked confidence in getting to the first hurdle to approach and clear the hurdle without hesitation.

Starting with their ‘other’ foot forward can feel unnatural in the beginning, however, once the change has a positive impact the athlete will become more comfortable. Suggesting that an athlete swaps their foot position at the start is one of the quickest, easiest and most reliable solutions to a frequent problem in hurdles events.

NOTE: Athletes should be able to clear a low hurdle comfortably with either lead leg. Many athletes will always maintain the same (preferred) lead leg and need to be encouraged to practice using both or alternating.

START LINE TO CLEARING TWO HURDLES

Aim: To allow the athletes to practice the full hurdling action.

Set Up: Set up two flights of ‘foam-top’ training hurdles at the correct competition distance for the age group, either at or below the correct height for the age group. Place cones on the ground where the third hurdle should be, as a finish line.

Activity 1: For this first activity, lay the second hurdle flat on the ground. From a standing start, athletes are asked to run fast from the start line, and clear the first hurdle, using a basic hurdling technique. The athletes step over the second hurdle and then run through the finish line. The height of the hurdle can be increased as the athletes’ confidence grows.

Emphasize running fast to the first hurdle without slowing down or hesitating. Reinforce the correct basic lead and trail leg action. Introduce the concept of a smooth run to the first hurdle, arriving on the preferred lead leg without hesitating or slowing. Advise athletes that if they are having trouble achieving this, to try swapping legs at the start line.

Activity 2: Both hurdles are upright for this activity. From a standing start, athletes are asked to run fast from the start line, clearing both hurdles and through the finish line. The coach can set the hurdles at different heights to allow the athletes to grow in confidence through the activity (e.g. hurdle 2 lower than hurdle 1 to encourage athletes to attack the second hurdle).
Emphasise the same coaching points as in activity 1. Encourage a smooth transition between the hurdles for whatever stride pattern the athletes are using.

Skill Extension 1:

- If the athletes are performing the skills safely, you can introduce competitive training runs over two hurdles to the ‘finish line’.

Skill extension 2:

- If there are a number of hurdlers being coached, a hurdles shuttle relay can be conducted. A traditional shuttle relay formation is used however each team occupies two lanes; a hurdles lane and a sprinting lane. Conduct the relay in a similar way to a traditional shuttle relay, but each athlete must run once over the hurdles and once on the flat track.
- While the hurdles is a highly technical event, achieving a basic and safe level of competence can be achieved in a short space of time.

**Start line to clearing MORE than two hurdles**

**Aim:** To get athletes to hurdle from the start line over more than two hurdles.

**Set up:** As above. Adding more than two hurdles.

**NOTE:** For younger athletes who compete at 75/80m hurdles, running to 5 hurdles in training is sufficient. For older athletes, they may want to extend their runs out to 5–8 hurdles depending on their ability, time of year etc. Be prepared to reduce the height and spacing of the hurdles depending on age and ability, as well as during a session if the athlete is fatigued.
**HURDLE DRILLS**

**NOTE:**
- Hurdle drills are an excellent tool in your coaching toolkit for ALL athletes and can be easily incorporated as part of your warm up or main session. Athletes from all disciplines (e.g. shot putters, distance runners, sprinters) can benefit from hurdle drills to increase hip mobility, endurance, and strength. There are a large variety of hurdle drills available – the coach should choose 5-10 that are most suitable and beneficial to their athletes.

- Drills should be completed using both LEFT and RIGHT sides to promote even development and improvements in technique. Repeat each drill 2 to 3 times on each side.

The following are some basic hurdle drills for lead and trail legs:

![Figure 3.8](image)

*Figure 3.8* Leading-leg action with no lower leg extensions.

![Figure 3.9](image)

*Figure 3.9* Two views of lower-leg extension over the end of the hurdle.
STEP 4 TRAIL LEG DRILLS

OBJECTIVES:
To improve trail leg action.

- Start with exercises standing upright.
- Add hurdles to get correct height.
- Proceed to walking and jogging.

TIPS:
- For trail leg drill, ensure landing foot is beyond the hurdle.
- Increase speed as confidence grows.
- Don’t exaggerate the lean into the hurdle.
**Hurdle Games**

**Hurdle Game**
Each team is given a pile of cardboard boxes. Marks are placed showing the points to which the boxes must be carried. The first runner carries his/her box to the first mark, returns and sends off the next runner with a hand slap. The second runner carries his/her box to the second mark, etc. The first round is finished when all the boxes have been distributed. In the following rounds the boxes are used as hurdles. Shuttle and turning relays are possible. In the last round the boxes are collected one by one and returned to the start.

**Note:** The marks should be positioned in such a way that the boxes can be run over with a specific rhythm (“one-stride rhythm”, “two-stride rhythm” etc.).

**Variation:** Cones can be set out instead of marks. In the first round the runners place rings over the cones. In the following rounds the runners hurdle the cones/rings.

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**Educational Card 2: Sprint/Hurdles Shuttle Relay**

**Objective:** To improve the organisation of the distance between the starting line and the 1st obstacle

**Proposed situation:** Have 3 different courses [5, 6, 7m] at the participants’ disposal as following:
- Start from a crossbar on the ground
- Safe obstacles are placed at a 5-m, 6-m, 7-m distance (they are low so that can be cleared easily).

**Starting position**

**Instructions for the exercise:**
- Do not slow down before the obstacles
- Sprint until the finishing line
- Make a fast transition to running after clearance

**Noticeable points:**
- Progressive acceleration towards the obstacle
- Progressive stride amplitude
- Take-off is taken far from the hurdle
- Active and balance landing after clearance

**Teaching progression:**
- Vary the distances
- Run in series
### Useful Links:

**Long Jump:**
[https://coachingyoungathletes.com/category/articles/long-jump/](https://coachingyoungathletes.com/category/articles/long-jump/)

**Hurdles:**
[https://coachingyoungathletes.com/category/articles/hurdles/](https://coachingyoungathletes.com/category/articles/hurdles/)

### References:

**Website:** [https://coachingyoungathletes.com/](https://coachingyoungathletes.com/)

**Book:** IAAF Run! Jump! Throw! – The Official IAAF Guide to Teaching Athletics

**Book:** Conditioning Young Athletes – Michael Carrera and Tudor Bompa (2015).

**Book:** Fundamentals of Track and Field 2nd Edition – Gerry Carr.