

THE LONG JUMP

OVERVIEW

The Long Jump is a popular event in Australian. To be a good long jumper the athlete needs skill, speed, speed endurance, flexibility and strength. Some of these components take many years to develop, but young athletes can learn the correct basic technique of the event at an early age.

SAFETY FIRST

Before conducting a training session or competition check the following safety precautions:

- The pit has been dug to at least 50cm deep with clean sand
- There are no hidden foreign objects such as glass, cans, stick, stones etc.
- The take-off area is flat, flush with the surface of the run-up, and able to withstand the full force of the athlete's foot.
- Take-off boards should be secured firmly to avoid moving during the take-off with a surface that the athletes' shoes will grip and not slip.
- The run-up surface is firm and flat – free from pot-holes, debris and other athletes.
- Rakes, shovels and other equipment are placed face down away from the landing area so the athlete cannot stand on, or trip over, them when leaving the pit
- Athletes should be wearing shoes that provide protection and support, particularly in the heel.
- Ensure the athletes are well warmed up, including flexibility exercises, before commencing any activity.

- If an athlete is injured discontinue the activity and seek treatment immediately.

RULES

It is important for coaches to educate the athletes on the rules of the event so they will understand how to avoid being fouled on their jumps. The basic rules of long jump are as follows:

- The athletes must not take off in front of the line of the take-off board or metre square nearest to the pit – if the athlete takes off from behind the board or mat it is not a foul.

- In the process of landing the athlete must not put their hand or any part of their body outside the pit closer to the take-off area than the mark they made in the pit.
- On completing the jump the athlete must not walk through the pit towards the take-off area (they should always be encouraged to walk towards the back of the pit to exit).

It should be noted that these are not only the rules for long jump, but are considered the most important for Little Athletes to know.

THE COMPONENTS OF THE LONG JUMP

The long jump event consists of four continuous components – the run-up; the take-off; the flight and the landing. Each component should be practiced individually to maximize the athlete's full potential. The fastest sprinter may not win the long jump if the take-off action has not been properly developed.

THE RUN-UP

The main features of the run-up are accuracy, rhythm and consistency. Efficient running form will assist the athlete to build the required speed as well as ensuring a potentially effective position for take-off.

The long jump run-up should be long enough to allow athletes to gradually build up speed until they are at their optimum controlled speed at the take-off board (this is the fastest speed the athlete can go without losing control when they attempt to jump). Usually, an athlete who is a fast accelerator, such as a sprinter, will require a shorter run-up length than those who take longer to build up their speed. If the athletes do not reach their optimum speed or 'stutter' (take short steps) over the last few strides the run-up may be too short. If the athletes slow down before the take-off board the run-up should be shortened as this is usually caused by the athlete over-striding to the take-off board or reaching the optimum speed too early.

Athletes should have their own run-up distance bearing in mind that younger athletes will have shorter run-ups than older (or even taller or faster) athletes. Once consistency has been established, the run-up distance should be measured with a measuring tape. If a tape is not available, the athletes can measure with their feet, starting from the front of the take-off board (the side nearest to the pit) or the middle of the square, counting the number of foot lengths until they reach their start mark. This distance will serve as a starting point for the next session or competition. It is important to be aware that wind conditions, varying track surfaces such as grass or synthetic, as well as inconsistency in running can alter an athlete's run-up distance. If the wind is behind the athlete the start may need to be taken back and likewise, if there is a headwind, the start mark should be brought forwards. Running consistently will help the athlete to be more accurate.

The run-up consists of three phases.

1. The **first or entry phase** – the athlete develops rhythm as he/she gradually builds speed.
2. The **central phase** – the athlete builds rhythm and develops optimum speed. It is particularly important during this phase that the athlete has a good sprinting action. This can be seen when the athlete's head, shoulders and hips are aligned (Fig 1).
3. The **preparation for take-off** – during this

- A Jumps Pentathlon consisting of 5 jumping events can offer a mini-competition that can be scored simply by the athlete landing in the pit in pre-marked zones. Events can include standing long jump, standing triple jump, 5 spring jumps, 5 hops, 5 steps and a jump or other combinations.
- Small carpet squares placed randomly over a confined area can provide a challenge for athletes to follow a trail by hopping, bounding or combinations of both, or bunny hopping.
- Flexibility exercises should be taught to athletes from an early age to assist in injury prevention. These exercises should be specific to the event and practiced correctly. Stretching for long jump should include hamstrings, quadriceps, calf, hips and back.

GENERAL DEVELOPMENT FOR LONG JUMPERS

Long Jumpers need many skills to master their event. They need to develop speed, strength, speed endurance, flexibility and technical skills. There are many options for a coach to be able to provide a challenging and varied program that will develop these skills. It is important to be aware that excessive training on any one component can lead to overuse injuries.

General training activities for long jumpers include:

- Running over a variety of distances for speed and speed endurance. Speed work is usually run over distances between 10 – 60 metres and fast pace with full recoveries between runs. Speed endurance is run over distances from 80 metres onwards at a sub-maximal (not flat out) pace with short recoveries.
- Bounding activities can be conducted in the form of games, mini-competitions or just for fun. Jump the River with skipping ropes laid on the ground with one end about 1 metre apart and the other end about 4 metres apart can encourage the athletes to try to leap further as the distance becomes increasingly difficult. This can be done from a standing position or with a short run-up.

phase the athlete's posture becomes more upright and over the last 3 – 6 strides there should be an increase in cadence (arm and leg speed). The last (or take-off) stride should be fast and the foot should be flat (not stamped) on the board.



Fig 1: In good sprinting action the athlete's head, shoulders and hips are aligned.

Young athletes may tend to try to run as fast as they can from their start marker. To help teach them to gradually build their run-up speed place 3 markers at roughly equal distances alongside the runway or the track over the run-up distance. Starting at an easy pace ask the athlete to 'change gears' every time they pass a marker building greater speed in each section until they pass the take-off area or 'finish line'. Encourage the athlete to maintain their speed until well past the last marker. (Fig 2.)

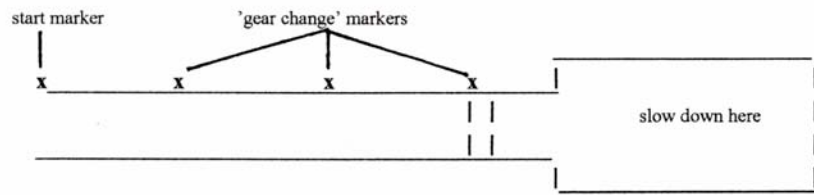


Fig 2: Gear changes can assist the young athlete to learn how to build up speed in the run-up

SKILL DEVELOPMENT ACTIVITIES FOR THE RUN-UP:

- Practice sprint drills over 20 – 30m.
- Form runs over 40 – 60 metres – the athlete concentrates on good running form then tries to maintain form as speed increases.
- Short sprints over 20 – 40 metres either from a standing start, a rolling start (2 – 3 walk/jog strides before sprinting, or flying starts (the athlete builds speed over 5 – 10 metres before sprinting flat out over desired distance).
- Practice running over the take-off board without looking. Most young athletes make judgment errors as they approach the board resulting in slowing down, stuttering or over-striding

- The swing away – on landing the athlete relaxes the ankle, knee and hip joints and swings the hips to the side to clear the marks made by the feet. Inexperienced athletes will tend to commence the swing away actions during the flight, traveling through the flight sideways. This counteracts the efficiency of the flight techniques as well as putting the athlete at risk of injuring the hip area on impact. This technique is recommended for older athletes who have a sound skill level in long jumping

SKILL DEVELOPMENT ACTIVITIES FOR THE LANDING:

- Short run-up jumps ensuring efficient take-off action and attempting to put the chest on the thighs during the preparation for landing (hold the take-off position momentarily first and avoid performing this action too early in the flight).
- V-sits – the athletes try to touch their toes while balancing on the point of their backside, forming a V position. This strengthens the lower abdominal muscles and creates an awareness of the correct position.
- Jump up onto high jump mats from a short run-up – ensuring strong take-off movements to gain maximum height and landing with full extension. It is NOT recommended to encourage the athlete to land on the backside in the pit as this can result in serious injury.

LANDING

An efficient landing is a byproduct of an efficient take-off. If the athlete does not get sufficient height at the take-off it may be difficult to gain the best landing position.

Key points in the landing phase:

- a. Landing is made with the feet together in front of the body
- b. The knees bend on contact to allow the body to move beyond the foot marks (Fig. 7).



Fig 7: An efficient landing begins at take off.

If the athlete has poor extension prior to landing it may be due to forward rotational forces or poor abdominal strength to hold the jackknife position.

The most common techniques used in landing are:

- The scoop through – where the athlete relaxes the knees on landing then scoops the hips through to clear the foot marks.

THE TAKE-OFF

The take-off action converts the athlete's speed of the run-up into a vertical lift off the board and will determine the flight path of the athlete's centre of gravity through the air.

Key points in the take-off phases are:

1. A fast, firm flat footed plant with the foot slightly in front of the body. The athlete should avoid stamping on the take-off board as it will be counter-productive to getting lift off the board.
2. There should be a vertical alignment of the head, upper body and hips, with full extension of the take-off leg at the hip knee and ankle. The athlete should avoid bending in the middle in the take-off position as this will accelerate the forward rotation of the body once it is in the air. (Fig.3).
3. There is a powerful drive of the free knee to hip level. The free knee is bent with the foot under the line of the knee – not leading it. If the free knee drives higher than the hip level (or parallel) there will be a tendency for the hips to drop therefore making an effective lift off the Board more difficult. If the foot is leading (ie. Not directly under the line of the knees), this will result in a slower and less efficient action in converting the horizontal speed the athlete has built in the run-up. The foot should be dorsiflexed (at right angles to the shin). (Fig.4)

4. Coordinated with the free knee drive is a fast, sharp opposite arm drive (this is the same arm as the take-off foot). The arm should be bent at a 90 deg angle with the hand stopping at forehead level (any higher and it will be less effective)
5. The athlete's eyes should be looking straight ahead as he takes off as this will ensure the head is in a stable position
6. The athlete should avoid a long last stride to the take-off board as this will only serve to place the body in an inefficient take-off position (as will a stride that is too short). The last stride should be fast and flat

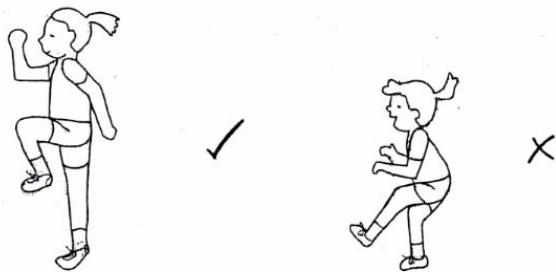


Fig.3: - There should be a vertical alignment of the head, upper body and hips with full extension of the take-off leg at the hip and ankle on take-off.

Note – in the sail technique, the take-off leg is driven forward with the foot leading. This puts the athlete's body into an early landing position and accelerates the forward rotational effects.

The hitch kick is developed from the stride jump, where the legs complete another cycle before landing is completed. The arms work in synchronization with the legs during the cycle.

SKILL DEVELOPMENT ACTIVITIES FOR THE FLIGHT:

Note: Always ensure posture is tall and eyes are looking straight ahead. Once the athlete has developed the basic skill, a simulated arm action as in the take-off may be introduced:

- Continuous galloping over 10 metres
- Walking 3 strides and performing one gallop
- Jogging 3 strides with one gallop
- Single gallop over one low hurdle
- Gallops over two low hurdles
- 3 – 5 stride run-up with a gallop over low hurdle or pop-up sticks into the pit.

It is quite normal for an athlete who has mastered the take-off drills may regress back to a poor take-off position when learning the flight actions. Continue to reinforce the correct position at take-off, but be aware of the risk of overloading the young athlete with too much information at one time.

and the technique adopted simply prepares the athlete for an efficient landing position.

One of the key points of the flight phase is, immediately after leaving the board, the jumper should momentarily hold the take-off position with the head, shoulders and hips in line.

TEACHING THE STRIDE JUMP:

The teaching sequence of the stride is as follows (Figs. 6a-d)

- a. the athlete performs a holding take-off and adopts a long, thin shape in the air
- b. the take-off foot flicks up to the athlete's backside
- c. the take off knee drives forward and up to join the free leg while the opposite arm is cycled over the shoulder to join the other arm
- d. arms and legs move forward to a jackknife position and landing is completed with two feet together.

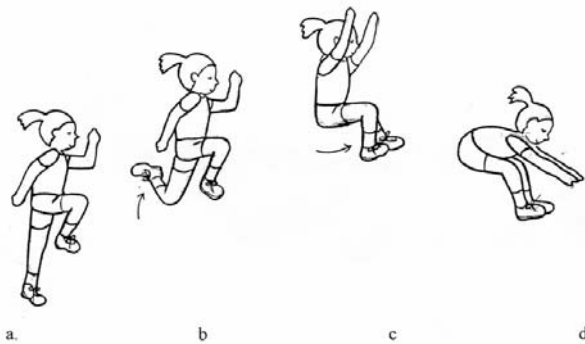


Fig 6: The Stride Jump sequence

When teaching the take-off actions it is not necessary to work over the full run-up distance. Emphasis should be only on the take-off movements. Start off with 3 strides and as the skill becomes reinforced, have the athlete move back 5 – strides, then 7-9 strides.



Fig. 4: The free knee is bent with the dorsiflexed foot under the line of the knee. There is a coordinated arm drive in the take off action and the athlete's eyes should look straight ahead.

Young athletes are usually more interested in how far they can jump so it is important to explain what you are trying to teach them and make it challenging and fun at the same time. Try to encourage them to feel themselves performing the skill correctly and praise them when they achieve success.

SKILL DEVELOPMENT ACTIVITIES FOR THE TAKE-OFF

- Have the athlete try to hold the take off position into the pit (tall posture, free thigh about parallel, opposite arm bent with hand to forehead level, eyes straight ahead)
- Suspend an object above the pit so athletes will have to try to jump up and touch it with their hand (an orange net fruit bag stuffed with plastic bags is a safe and economical idea)
- Stand at the side of the pit nearest to the athlete's free knee. Ask the athlete to try to touch a piece of foam (or light cardboard tube) with the knee as they hold the take-off position (when the thigh is about parallel to the ground). Remove the object just before impact.
- Ask the athlete to leap into the pit holding the take-off position and landing on the opposite foot. Provide a variety of objects at the start of the pit for the athlete to jump over emphasizing correct take-off movements. Low, light hurdles, does, or pop-up sticks (a mini-high jump made of 3 pieces of dowel sitting on a bulldog clip on each upright – Fig.5) can be used. Avoid objects that may cause injury to the athlete such as full sized hurdles, boxes etc)

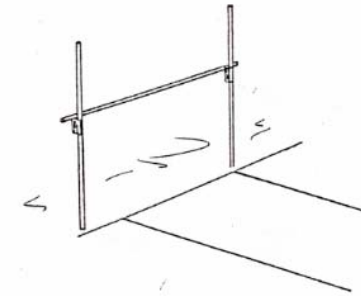


Fig.5: Pop-up sticks are easy to make and useful for take-off drills

THE FLIGHT

There are several different flight techniques in long jump. Most untrained Little Athletes perform the sail technique. This can be easily adapted to the more efficient stride jump, which is a precursor to the hitch kick. Both the stride jump and the hitch kick enable the athlete to adopt a more efficient position in the air to retard the forward rotational effects of the light. The other most common technique in the hang. This requires the athlete to arch the back during the flight then forcefully thrust the legs forward into the landing.

It should be remembered that the height the athlete achieves in the flight is determined by a combination of the run-up speed and the take-off position and actions. Once in the air, the athlete's flight path is predetermined