

Cross-bar, uprights and landing area

The high jump cross-bar is 4 metres long. Any style of uprights or posts may be used, provided they are rigid. The distance between the uprights should be no less than 4 metres. The high jump stands (uprights) must be positioned so that the bar can fall off either forwards or backwards – i.e. the supporting rests for the ends of the bar must point inwards. The landing area should measure not less than 5m by 3m.

Safety

Landing area - should be made of foam rubber, or similar material, deep and dense enough to cushion the landing of the heaviest athletes. Thickness (height) of landing area may be at least 20 cm high for scissors style and 40 – 90 cm high for the flop (depending on how high the athletes are jumping). Ideally, the landing area should extend past the uprights (1 – 2 m past on each side). If separate “high jump buns” are used, they should be tied together (and preferably covered) to prevent gaps developing, so that no jumper can land in a gap between “buns”. Some landing areas have a top surface designed to take landing with a spiked shoe.

These surfaces are

uncomfortable to land on (may cause skin burns when landing from the flop) and should be covered with a soft sheet or large towel.

Little athletes should do most of their jumping off a soft surface (e.g. grass). This is less jarring to their bones (particularly to the softer growing parts of the bones). If the take-off areas are getting worn, or compacted, move the high jump landing area, so that fresh take-off areas can be used. Rubber matting (non-slip) may be useful for the take-off areas, particularly in wet weather.

Shoes with non-slip soles are advisable. If the shoes have some support under the arch of the foot and some cushioning under the heels, they are better still.

Flexible (stretchy) high jump bars are available for training. These have two advantages: 1. Jumpers will not hurt themselves if they land on a flexi-bar, whereas they may do if they land on a hard bar. Frequent landings on a hard bar at training may put an athlete off. 2. The flexi-bar does not have to be picked up and placed on the supports every time someone knocks it down.

The risk of injury in high jumping is also reduced by preparation:

1. Always make sure that athletes warm up before jumping (jogging, stretching, preliminary drills).
2. Strength and suppleness are important for high jumpers, so strengthening and stretching exercises are essential.
3. Develop technique while progressing gradually from low to high heights over several weeks or months.

See under Take-off for the correct take-off area. [If the jumper's take-off point is close to the centre of the bar, the landing will be near the edge of the landing area]

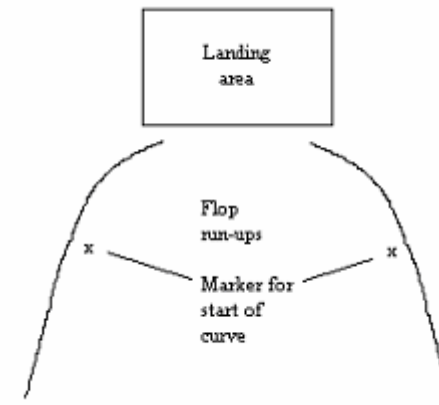
Take-off leg and lead leg

The take-off leg (or foot) is the one that pushes off the ground. The lead knee (or leg) is the one that drives up towards the bar first.

Skipping drills:

skipping on the grass, with a two-arm lift and a high knee lift of the lead leg.

- Drills for running style: 10 - 20 m springy marching with knee lift to hip height & sprint arm action
10 - 20 m springy high knee running (short steps) with sprint arm action
10 - 20 m butt kicks (running with short steps and high heel lift behind)



Take off position: a static drill – place take-off foot slightly across the body and lean to the side of the take-off foot. Raise arms and lead leg (knee bent) while rising to the ball of the take-off foot, in a simulated take-off action.

Take-off aiming for basketball ring (or any high object – e.g leaves of tree). This may be done from a curved or straight run-up.

Take-off simulation: this may be done on the grass away from the high jump area, or alongside the landing area, from the appropriate take-off point. Walk or jog a few steps, then jump off one foot vertically, lifting arms and knee of the lead leg, land on two feet and walk or jog on. The simulated take-offs may be done in a ‘string’ of 3 to 6 take-offs with a number of steps or strides in between. They may be done with a straight line approach or on a curve. Some of these simulated take-offs should be done off the non-preferred leg, to help coordination and to balance development of both sides of the body. For a two-arm lift at take-off, the arm on the lead leg side must be held back in the last stride before take-off, so that both arms can be lifted together. This is easier to practise with a walking approach at first, then progress from a jog-up to a run-up.

Style

Two styles are used in competitions by little athletes – the “scissors” and the “flop”. Senior athletes usually use the flop in competition (although they do the scissors as a training drill).

The Run-up

In both the scissors and the flop, the right footed (i.e. right foot take-off) jumpers approach the bar from the left hand side and the left footed jumpers approach the bar from the right hand side.

Scissors run-up

For the scissors, a straight run-up, at an angle of about 30 degrees to the bar, is used. The competition run-up may be 7 to 11 strides long, according to the jumper’s preference. At training, to emphasise vertical take-off and to save energy, jumps from 3 or 5 strides may also be used.

Flop run-up

For the flop, the run-up starts in a straight line, and ends in a curve (over the last 3 – 4 strides before take-off). The competition run-up may be 7 to 11 strides long, according to the jumper’s preference. For little athletes, 7 to 9 strides are recommended. At training, to concentrate on a vertical take-off and to save energy, jumps from 3 or 5 strides may also be used. The run-up starts with a slow to medium rhythm and finishes with a quicker rhythm. When running the curved part of the run-up, the jumper should lean into the curve (away from the bar). This will ensure that the jumper takes off vertically, rather than towards the bar.

The take-off

The take-off point is the point where the take-off foot pushes off the ground. It should be in the vicinity of the near upright (i.e. the upright which is nearer to the jumper when approaching the bar).



Right foot jumper's --> x x ← Left foot jumper's
take-off point take-off point
(about arm's length from bar) (about arm's length from bar)

The jumper has some forward velocity, as well as upward velocity, at take-off. This means the jumper will land forward from the take-off point. When jumper takes off about arm's length from the near upright, they will land near the middle of the landing area. At training, it is useful to mark out a take-off "box" or place a non-slip mat in the correct take-off area, so that it becomes a habit to take-off from the correct place.

Scissors take-off

The lead leg and both arms are lifted vigorously while the take-off leg pushes off the ground, and the body is held vertical during and just after take-off. The take-off foot should point 'through the bar'. The lead leg, usually slightly bent at the knee, is nearer to the bar. Encourage jumpers to 'plant' the take-off foot actively and lift the arms (bent at the elbows) and the lead leg high during take-off.

Drills and exercises

Back arch exercises:

(a) lying on back – knees bent -> raise hips off the ground and make a slight arch from shoulders to hips.

(b) lying on back – knees bent -> put hands on ground behind shoulders and press up so that body is arched backwards and supported by hands and feet.

"Backovers":

start 2 foot-lengths away from the bar, with back to the landing area. This may be done with or without the flexi-bar. Have jumpers bend knees (to 'coil the spring'), then jump up and backwards, first arch back (look at sky, lift hips and 'tuck' heels under), then raise head and shoulders and legs and land on back.

Run-up drills

such as circle runs of varying diameters, slalom runs of varying width and breadth – to get the feel of leaning while running curves.

Run-up practice:

without jumping – jumpers practice their run-up and coach watches for rhythm (acceleration from slow to fast, springy steps), and position of take-off foot. Jumper is encouraged to lean into the curve and keep on running a curve past the front of the landing area.

3. With no bar, ask little athletes to run up on a curve and do a backward roll on the landing area. This will cause them to naturally turn their backs to the landing area.
4. Have the jumpers try “backovers” (see below under drills).
5. Jumps over a low flexi-bar, from a 3 to 5 stride curved run-up, as in ‘1’, trying to lift hips when crossing the bar. Next stage is hip lift and look at sky when crossing the bar, quickly followed by lifting head and legs before landing on the back, as in the backovers.
6. When jumpers are achieving a degree of ‘lay-out’ over a low bar when jumping from a short run-up as in ‘3’ above, the bar may be raised progressively by small increments. Frequently encourage the jumpers to lean in to the curve (away from the bar) and to lift their arms and lead knee vigorously to assist in a good vertical take-off. If the jumper emphasises the lift of the inside arm (the one closer to the bar), encourage them to lift it upwards first (not towards or over the bar too soon, as this will lower the inside shoulder and increase the risk of knocking the bar off).

Flop take-off

The lead leg (knee bent) and both arms (or sometimes one arm) are lifted vigorously while the take-off leg pushes off the ground. The take-off foot should point ‘through the bar’. The body should be held vertical during and just after take-off. The curve at the end of the run-up sets up the rotation of the back to the bar, which occurs after the take-off foot has left the ground. The bent lead leg may be kept high while the jumper rises to the peak of the jump. The back should start to arch when shoulders are up to bar level.

The Bar clearance

Ideally, the jumper should cross the bar at the centre. This is the lowest point of the bar, and also the point at which the height is measured. Crossing the centre of the bar also ensures that the jumper will land safely near the centre of the landing area. To cross the bar at the centre, the jumper must take off about arm’s length from the near upright, as mentioned under ‘take-off’.

Scissors bar clearance

While the lead leg crosses the bar, the upper body leans forward. Then while the take-off leg is lifted up and over the bar, the lead leg is lowered towards the landing area and the upper body returns to upright for landing.

Flop bar clearance

The jumper crosses the bar upper body first, with back to the bar. The back arches over the bar. If the athlete’s back is not so flexible, the body and thighs form a straight line, while the lower legs drape down at the high point of the jump. Encourage them to “tuck” their heels under. The arms may be held alongside the body

(after a two-arm lift), or the inside arm may cross the bar first, while the other arm is alongside the body to avoid touching the bar. When the hips have crossed the bar, the head and legs are raised to ensure that the legs clear the bar and that the jumper lands safely on the back.

The landing

The high jump landing should be safe: this is partly ensured by the type of landing area (see section on safety) and partly by good technique.

Scissors landing

If balanced, the jumper will land safely on both feet (the foot of the lead leg will land before the take-off foot). If the jumper is off-balance, other landings may occur – which is the reason for a soft landing area.

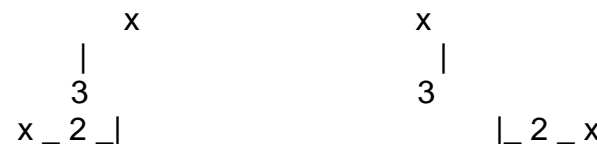
Flop Landing

After crossing the bar with upper body and hips, the flop jumper lifts head and shoulders, and legs. The jumper should then land on his/her back. Failure to lift the head and shoulders high enough, will cause the jumper to land on the neck, increasing the risk of injury. It is best to avoid making a habit of doing a back somersault after landing, due to the risk of over-flexing and hurting the neck, if this is done repeatedly.

Getting athletes started with the flop.

Important – review safety tips about landing area – a deep, well-cushioned landing area is needed.

1. A simple way to find where to start the curve is for the jumper to take 3 paces from the near upright, at a right angle to the bar, then turn a right angle and take 2 paces parallel to the bar, and mark the spot. (This spot may have to be adjusted later, when the athlete and coach have experimented with the run-up).



The athletes may practice their run-up without jumping, to make sure the take-off foot will be in the right area for take-off.

2. Use the landing area with no bar, for a start. Have the athletes do a 3 to 5 stride run-up with the last 3 or 4 strides on a curve, a vigorous take-off with bent lead knee, and feel themselves turn in the air, then land sitting on the landing area. Get them to repeat this 3 to 6 times to feel how the curved run-up helps them to turn in the air.