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## Physical education 4, Jumping and hurdling

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EDUCATION DEPARTMENT  
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# Physical Education

## 4. Jumping and Hurdling

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# JUMPING.

Jumping a distance along the ground or a height in the air appeals to all children. At play in the school-ground even children in the infant room will jump over obstacles that they find in their path. The muscular effort required in jumping demands complete co-ordination between the working muscles and the controlling nervous system. In the infant school jumping should be confined to jumping along the ground and over very small heights.

## AGES 8 TO 9 YEARS.

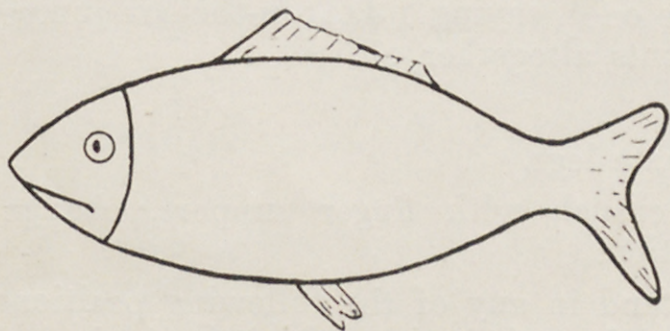
A revision of the following practices is useful in the early stages of the work for children of 8 to 9 years:—

1. Run and jump over a line, then over a series of lines; run and jump over all the lines in the playground.
2. From feet together jump or bounce over a line.
3. From feet together bounce over a series of lines. (Children begin the bounce from the standing still position.)
4. Jump the "dog's tail." From feet together jump forward and backward over a line.
5. Jump from side to side over a line.
6. Jump from side to side over a line, moving forward and backward.

After the revision work the following practices may be given:—

1. Stepping stones. Move from circle to circle in the following variations:—Running, hopping on right and on left leg, jumping with two feet together, jumping sideways, crouch jumping, rabbit hops.

2. Jump the fish.



- (a) Jump across tail.
- (b) Jump across head.
- (c) Jump across body.

3. Jump the widening creek. (Two lines are drawn on the ground, and the distance between the lines is increased.)

4. Walk up stairs with high knee raising, turn, run down stairs, and jump the last step (a space on the ground).

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5. Run to a space and jump over, taking off from the right foot and landing on the left foot. (This is a bound, and the correct take-off, the control in the air, and the landing must be watched.)

6. Repeat the last exercise starting with the opposite foot.

7. Jump from alternate legs, land on both feet, spring up, and run on.

8. Jump from alternate legs, land in crouch, spring up, and run on.

9. Free jumping. Jump a rope held approximately a foot from the ground.

10. Free jumping over a series of ropes.

11. Jump the swinging rope. The rope should be waved with a sideways movement.

12. Jump the twining snake. The rope should be moved up and down.

13. Jump over a series of small obstacles.

The following exercises should be practised in the physical education lessons to strengthen and to produce mobility in the feet, the ankles, and the legs:—

1. Skip jumping to 4 counts.

2. Skip jumping, 4 low, 4 high.

3. Skip jumping, 3 high, 1 low.

4. Skip jumping, 4 forward, 4 backward.

5. Astride jump to 4 counts, skip jump to 4 counts.

6. Skip jump to 4 counts, turn about to 4 counts, skip jump to 4 counts.

7. "Jack-in-the-box". Crouch, knee spring to 3 counts, then spring as high as possible on 4, saying "Jack-in-the-box jumps up like this" (that is 4 counts altogether).

8. Spring step.

9. Hopping on alternate legs.

10. Run anywhere, crouch with finger support, change to rabbit with ears up position.

11. Run anywhere, stand in any of the following positions:—  
(a) on toes, (b) on one foot, (c) with a high knee clasped in both hands, (d) with one foot held in front, (e) with one foot held at back, (f) with finger support on ground, raise left leg behind, (g) like a stork—on one leg, the sole of the other foot resting on the stationary knee.



## AGES 9 TO 10 YEARS.

1. Jump over a rope held 1 foot from the ground, with feet together; jump forward, sideways, backward.

2. Bound over a rope from alternate feet.

3. Jump a rope from alternate feet; land on toes, with feet together.

4. Jump a rope; land in a circle or on a line.

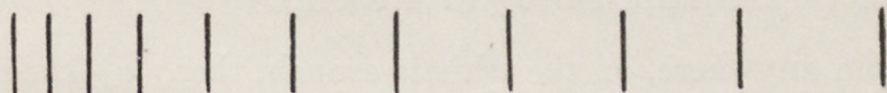
5. Jump a rope, land in crouch, spring up, and run on.

6. Jump a wandering rope. Children stand still in a circle; one child stands inside the circle and one outside, each holding an end of a rope; the child outside the circle runs around. The children face the rope and jump with feet together. By facing the centre of the circle the children jump the rope sideways; the rope is moved both left and right.

7. Jump a turning rope—"Jump the Moon".

8. Toe backward, take a step forward, then jump and land with feet together.

9. Graded-ladder jump. Tread in the spaces, then on the lines.



Gradually increase distances until lines are 4 or 5 feet apart

10. Hopping forward. Stand on a line, take three big hops forward. Repeat with the other leg.

11. Forward, sideways, and backward jumping. From feet together jump over marked spaces (4-foot space for forward, 3-foot for sideways, and 2-foot for backward).

12. Jump up to "head" a hand or a ball held in the hand.

13. Step and jump; finish over a rope held 1 foot from the ground.

14. Jumping over a stick (in twos). Partner holds stick at varying heights.

15. An oblique jump from either foot over a rope held 1 foot from the ground. (See explanation of "Scissors Jump" on page 12.)

16. Jump from foot to foot over a series of low objects, and land in a circle, in crouch, with finger support.



The children in this age group may repeat most of the exercises listed to be practised in the physical education lessons for those aged 8 to 9 years (see page 2), but the movements should be made more complicated, as shown in the following practices:—

1. Skip jumping. Move in a square to 4 counts—4 skip jumps forward, 4 sideways, 4 backward, 4 sideways, returning to the starting position.

2. Skip jump to 3 counts, on 4 jump forward from both feet and land on both feet; continue, repeating the whole movement.

3. As for the above exercise but moving in a square.

4. Change between skip jumping on the spot to 4 counts and spring step forward to 4 counts.

5. Skip jump to 4 counts; hop on each leg to 4 counts. Repeat.

6. Skip jump to 3 counts; land in crouch on 4. Later turn to right or to left on 4.

7. Mark time with ankle stretching, followed by hopping with alternate knee raising.

8. Hop to 4 counts, clasping knee in both hands.

9. Crouch and knee spring to 4 counts.

10. Run anywhere, on the whistle crouch, then (a) knee spring, (b) rabbit hop, or (c) kangaroo hop.

11. Hop holding one foot behind; change feet on 4.

The following games should also provide useful practice:—

1. Jumping Jack (see page 2 of pamphlet No. 1, *The Training of Children in Running*).

2. "Charlie over the Water" (see page 2 of pamphlet No. 1, *The Training of Children in Running*).

Simple relay races that include jumping: for example, (1) kangaroo hop to a circle, bounce a ball, run back; (2) run, jump over a rope, bounce a ball, run back; (3) crouch, jump up, bounce a ball, run back.

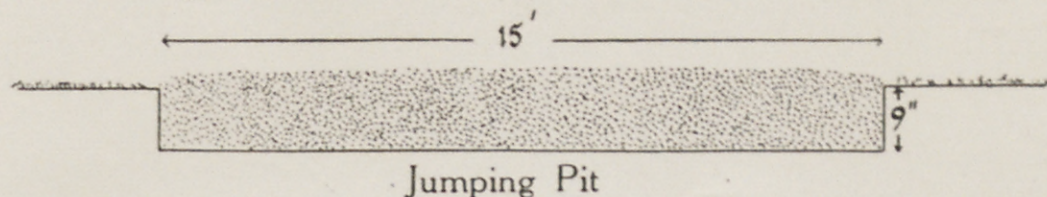
#### AGES 10 TO 11 YEARS.

With children from 10 years on a definite attempt should be made to encourage the correct technique. The film strip on Jumping should be studied. A jumping pit is now needed.



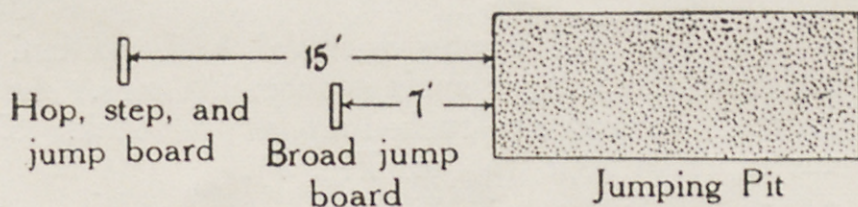
### *Preparation of a Jumping Pit.*

A space 15 feet long and 6 feet wide is marked out and dug down to a depth of 8 or 9 inches at least. The soil is broken up, freed from all clods and stones, and then put back in the hole to within 3 inches of the top. The soil is covered with sand, sawdust, or tan, and the pit is built up to a height of 3 inches or so above the ground-level. The surface should be kept well raked.



Seven feet from the pit a jumping board is put down for the broad jump. A thick piece of timber (Oregon pine 2 inches thick) is selected, and a board 2 feet long and from 6 to 8 inches wide is made. The top surface is painted white, and the board is placed in position by carefully digging out the turf to the exact shape of the timber and fitting the board flush with the ground. This is most important for it must be firmly in the ground; if there is a space at either side of the board it should be packed firmly with soil.

The board must be kept white and clear from dirt. A similar board is used for the hop, step, and jump, but it is put down out of line with the first board, as shown in the diagram. This board should be at least 15 feet away from the pit.



### *Types of Jumps.*

In jumping for distance there are the standing and the running broad jumps, and the standing and the running hop, step, and jumps. In actual practice the technique of the standing and the running jumps is the same, but the former must be mastered before the latter is attempted.

#### *Standing Broad Jump.*

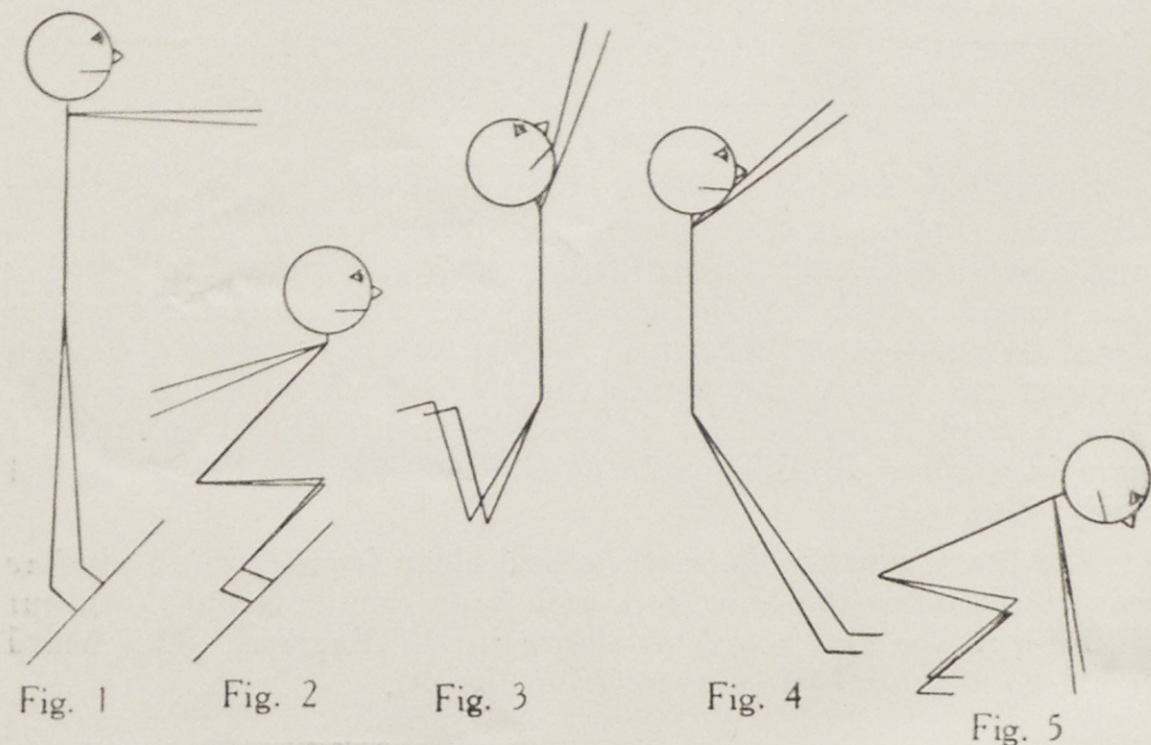
The movements of the standing broad jump are as follows:— From a line on which the toes are placed the jumper leaps forward from both feet and lands on both feet; the distance travelled is measured from the starting line to the nearest point where the body makes contact with the ground. This should always be the spot where the heels landed, but in a faulty jump where the jumper falls backward he can lose a good deal of distance.



### *Technique of the Standing Broad Jump.*

1. The jumper stands with his feet a little apart, say 6 inches, toes on the starting line, heels raised from the ground, and arms raised forward (see Fig. 1).

2. The knees are bent, and the jumper crouches down, swinging the arms slowly down and back, but keeping the head up (see Fig. 2).



3. Then the arms are swung forward and upward with a mighty swing, and the jumper springs from his toes. As the feet leave the ground the legs are tucked up at the back. The head and the arms must be kept up (see Fig. 3).

4. As the jumper is about to land he shoots the legs straight forward, so that the feet hit the ground slightly in advance of the body (see Fig. 4).

5. Finally, the arms are dropped forward and downward, and the body is allowed to move forward over the feet (see Fig. 5). This recovers the balance.

### *Technique of the Standing Hop, Step, and Jump.*

In this jump the movement is commenced by standing on one leg with the toes of the foot on a line. The free leg is swung backward and forward until the jumper is ready, and then he hops forward once, springing from the standing leg and landing on it. He steps forward on to his other leg, and from this leg finishes with a jump, landing on both feet. (The three parts must be practised separately before the whole jump is attempted.)

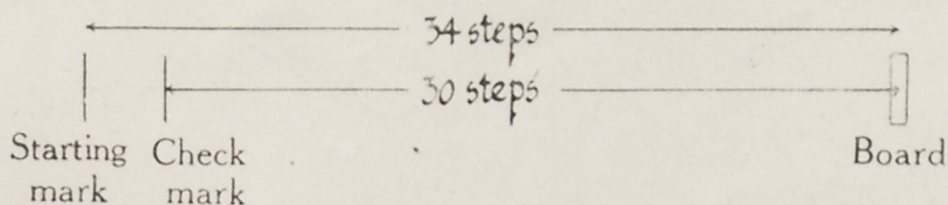


Every child can attempt this, even in the lower grades, but to improve the distance he must pay attention to the position of the trunk throughout the jump. It is obvious that the child is jumping and moving forward the whole time, and therefore when each foot hits the ground the body must be directly over that foot to get the maximum thrust. This means that he must sway his body over his "landing" foot. Suppose that he starts the triple jump by hopping from his right foot; when his right foot comes down to the ground at the end of the hop he sways his body to the right, so that when he steps forward on to his left foot he can get a maximum thrust from the right foot and leg. As the left foot hits the ground the body is swayed over the left foot, enabling the final jump to be done correctly. The position in the last part—the jump—should conform as nearly as possible to the position adopted in the standing broad jump, that is, the arms and the head must be held up, and the legs should be tucked up behind. Throughout the movement height should be encouraged, particularly on the last stage—the jump.

*The Length of the Run-up.*

In the running broad jump the jumper takes off from a board and lands in a pit. So that he can place his jumping foot on the board he must practise his run-up.

The jumper stands with his heels in the middle of the board and his back to the pit, walks thirty-four paces, and marks this point. He turns round and "toes" this mark with his feet together. If he jumps from his right foot, he starts from here with his left foot and walks forward four paces. Where his right foot strikes the ground he puts another mark—the "check mark".



He goes back and toes his starting mark. He walks forward the four paces again, and when his right foot strikes the check mark he runs as hard as possible over the board. Some one should watch where his right foot strikes near the board. Suppose that it falls 3 feet short, that is, 3 feet before he gets to the board; his two marks must then be moved 3 feet closer to the board, and the old marks must be rubbed out. From the new starting mark he walks forward again the four steps, starts sprinting again when his right foot hits the check mark, and this time he should be on the board with his right foot. It may be necessary to adjust the marks slightly. If the right foot is over the board on the



first attempt, shift the marks away from the board. If he jumps from his left foot, he starts from the starting mark with his right foot and puts his left foot on the check mark. The rule in short is as follows:—Opposite foot start, same foot check mark and board.

*Technique of the Running Broad Jump.*

On hitting the board with the “take-off foot” the flight through the air is commenced. The three alternative methods are as follows:—

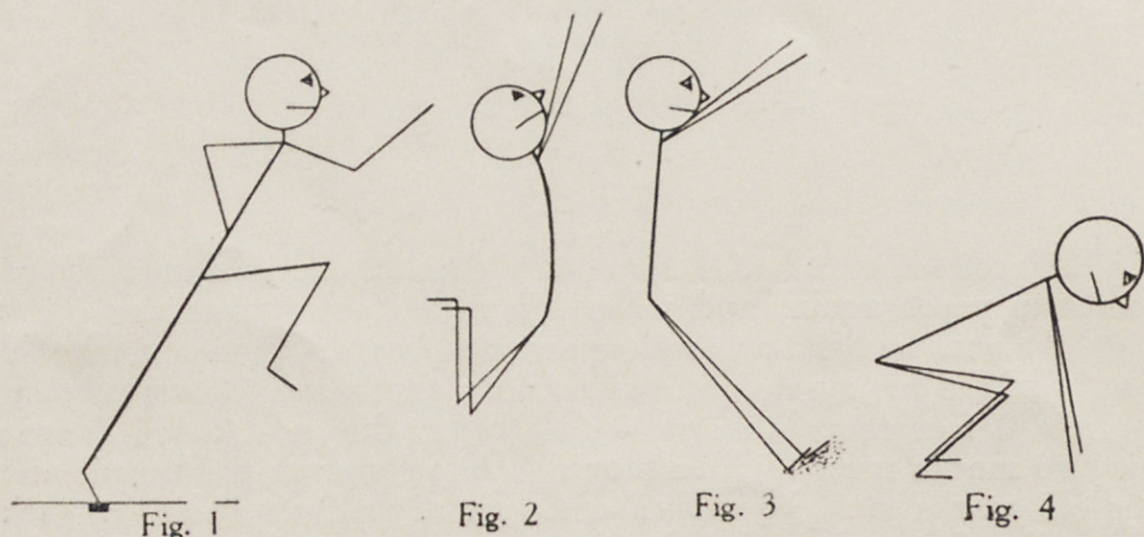
1. The legs are tucked up, and the arms and the head are held up as in the standing broad jump, except that the eyes should be looking upward at an angle of 45 degrees, and not directly upward at 90 degrees.

2. The arms and the head are held up, but the legs are brought up in front, with the knees almost on the chest.

3. The “hitch-kick”, or running in the air.

The first two methods involve a “sailing” through the air; the first one should be encouraged, because of its similarity to the standing broad jump.

*First Method.*—The “take-off foot” hits the board when the child is travelling at full speed. By means of a thrust from the toes of the foot, the forward motion is transferred to an upward and forward movement; in other words, the body leaves the ground at an angle of approximately 30 degrees (see Fig. 1). Immediately both arms go up and the legs are tucked up at the back. The back is usually arched, but this is not a deterrent for it enables the legs to be further tucked up. The whole position is



held, the jumper floating through the air (see Fig. 2) until he feels he is about to land. He then shoots his legs forward, at the same time swinging his arms down. When his heels hit the pit



he should be in the position shown by Fig. 3, where his body is behind his legs, and his arms are seen descending. He now allows his knees to bend; at the same time he forces his trunk right down until his chest and his thighs meet (see Fig. 4). This is aided by the swing of his arms and the forward motion of his body. The jumper will now find that his body has been brought forward over his feet. He now swings his arms forward and straightens his knees; the forward swing of his arms prevents him from sitting down backward in the pit and thus spoiling his jump.

The third method is going out of fashion slightly, and is a most difficult method for a child to master. The legs are kept moving, with a running motion; the whole movement is designed to keep the trunk up in the air as long as possible.

In all broad jumping the idea is to lift the trunk as high as possible and to hold it in that position for the longest possible time. The forward motion does the rest.

#### *Technique of the Running Hop, Step, and Jump.*

The technique of the running hop, step, and jump follows closely that of the standing jump.

1. The jumper hits the board as in the broad jump, and travels upward and forward at an approximate angle of 30 degrees. The "take-off leg" (say it is the right leg) is allowed to relax as the body travels through the air. When the right leg hits the ground again at the conclusion of the hop the right knee bends, and the left leg swings back to the position shown in the diagram. The body



Conclusion of the hop

should now be over the right leg as in the standing hop, step, and jump. Beware of making a hop that is too high, for in hitting the ground hard the jumper loses balance, and he may jar his foot.



2. The left leg swings forward, and with a big push from the right leg a big step is taken, the body swaying over the left foot.

3. Then from the left foot a jump is made, in just the same way as in the running broad jump, the jumper landing on both feet in the pit.

### *Exercises to Develop Jumping Ability.*

1. Hopping to 4 counts on left leg, then on right.
2. Hopping, holding knee in both hands, to 4 counts.
3. Hopping, holding foot behind, to 4 counts.
4. Skip jumping to 4 counts.
5. Skip jumping with a rebound.
6. Walking on the toes with arms swinging shoulder high.
7. Walking on the toes, changing to walking on the heels, with the body upright.
8. Long sitting position, feet astride—trunk pressing forward and downward to touch knee with forehead, with pressing.
9. Long sitting position—press forehead to knees.
10. Crouch, leap as high as possible, and stand erect.
11. Crouch, leap as high as possible, and sink down to crouch.
12. Knee springing to 4 counts.
13. Cross leg sit, hands clasped at back—shoulder rolling clock-wise and anti-clockwise, slowly and strongly.
14. Feet astride, trunk forward bend—arms swinging forward and upward for pectoral stretching.
15. Crook lying—arms swinging forward and upward for pectoral stretching.
16. Trunk bending left and right from feet astride position.

### *Activities That Are Useful in Jumping Training.*

1. General running training.
2. Standing forward jumps over a low rope, held from 18 inches to 2 feet from the ground.
3. Standing backward jumps over a low rope, held 1 foot from the ground.
4. Standing forward jumps over a marked space.
5. Step forward and spring high into the air.
6. Practise the run-up.



7. Frog hops, duck walk, kangaroo hops, etc.
8. Widening creek jump, wall and ditch bound.
9. Take two steps forward and jump a rope.
10. Practise the standing broad jump.

### AGES 11 TO 12 YEARS.

In general, jumpers in this age group can do the exercises and activities of children aged 10 to 11 years. When children are older, additional exercises of the following types may be practised:—

1. Trunk forward and downward bend to touch the toes with the fingers, bend the knees, and then spring upward as high as possible.
2. Knees half bend, spring upward, and return to the starting position.
3. Knees half bend, spring upward with arms flinging upward, and return to the starting position.
4. Long sit position, partner holding ankles—lower the trunk to lying position, and then sit up quickly, with the trunk straight.
5. Lying position—flick the legs up quickly until they are at right angles to the trunk, bend the knees, and straighten the legs to lying position.
6. Prone lying with the arms extended overhead—lift the legs and the upper trunk, the head, and the arms quickly to form an inverted arch.
7. Shoulder loosening movements, such as shoulder shrugging.
8. Trunk twisting quickly left and right, hips firm, neck rest.
9. Riding the bicycle—resting on the shoulders.

#### *Activities.*

At this stage, tumbling should be co-ordinated with jumping training. The suppling effects of forward and backward rolling are excellent. Spring is developed in diving over partners and through hoops, and, above all, balance and body control are learnt and are a great asset to young jumpers. Run-ups should be practised until the jumper is certain of his ability to hit the board. Easy jumps to develop form must be done. With this in view, a space should be marked for the jumper to cover, and he should clear this five or six times, showing correct jumping form.

From the age of 12 years on children must have constant coaching in the correct technique, and they should be allowed to practise regularly.



### *The High Jump.*

The introductory work for children 8 and 9 years of age is designed for all types of jumping. It will be noticed that children are encouraged to jump from either foot. When they reach the age of 10 years they should be taught the standing high jump, springing from the "jumping leg"—the leg they prefer to jump from.

#### *Standing High Jump (Scissors Jump).*

*Stance.*—Assume that the "jumping leg" is the right leg. The jumper stands with his left side to the bar, about 1 foot and a half away from it, feet slightly apart and pointing straight forward. The body is loosely poised, with the whole foot on the ground. When preparing for the jump raise the arms overhead and turn the head to look at the bar.

*Take-off.*—Swing the arms loosely down and back as the trunk is inclined forward. This brings the body weight more on the front of the foot. Take a deep breath during the movement and bend the knees. Follow this immediately by a vigorous stretching upward of the whole body, swing the arms vigorously forward and upward to a position in front of the head.

*Flight.*—Project the body in a vertical direction and swing the left leg upward. The right leg hangs loosely downward until the left is well over the bar, then it is quickly brought up after it. The body leans forward and a scissors jump is completed.

*Landing.*—The body lands on the left foot, the right quickly following, with the arms well overhead.

*NOTE.*—Practise the jumps at low heights until a good style is obtained.

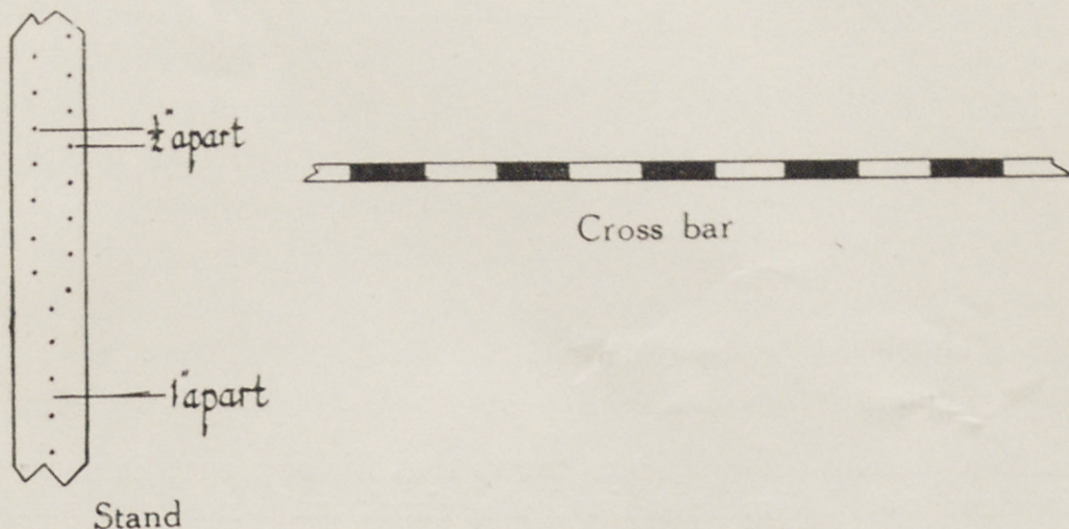
The step from the standing to the running high jump is not difficult, and most children do the scissors high jump well. A pit should be used to provide a soft landing.

#### *Running High Jump.*

The high jump stands are placed along one long side of the pit, on the side where the ground is level and firm. The children then have a firm run-up and take-off, and a good landing in the



sand. The high jump stands are easily constructed of strutted uprights, with holes drilled in them. The holes may be placed an inch apart up to a height of about 3 feet. Above this height they should be spaced half-an-inch apart, and if the wood of the upright is soft they should be staggered.



The cross bar should be painted black and white in the centre for a space of 2 feet to give the children something to "sight at" as they jump.

The following two errors are most noticeable in the work of young jumpers:—

1. They run too fast.
2. They have no idea just where they should place their take-off foot, and they either jump too far away or get too close. When they jump too far away they land on the bar, and when they get too close they hit the bar when they are rising.

A child should bound rather than run when approaching the bar, that is, the steps should be short and done with plenty of spring, this conserves jumping muscles and energy for the split second when all the muscles are called on to work together.

To measure the place where the take-off is made from, the jumper stands erect facing the bar, he raises his arms and moves back until his fingers gently brush the bar. The position where the feet are is the take-off spot, and it should be clearly marked. Remove the bar from the stands. The jumper turns in the direction of the run-up, steps off ten paces at an angle of 45 degrees with the bar, and marks this spot from which he is to commence his run. He then turns and steps forward two steps and makes a check mark. He walks back and stands with his toes on his starting mark.



If he approaches the bar from the left and therefore jumps from his right foot, he walks forward two paces, starting with his left foot, and puts his right foot on the check mark. He then begins his bounding run, watching his jumping mark. If his



right foot touches this point he knows that his approach is correct; if it does not he must adjust the check and starting marks, moving them backward or forward until the run-up is correct. Now, replace the bar at an easy height ready for the jump.

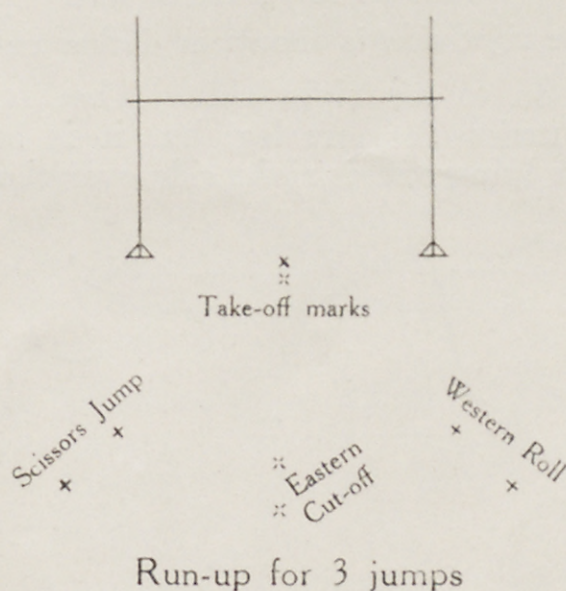
The jumper takes up his starting position, and goes through his run-up, keeping his eyes on his take-off mark. When his right foot hits this mark he springs up, at the same time lifting his eyes to the bar. He completes the jump as described in the standing high jump, keeping his left leg as straight as possible. At the moment the body crosses the bar the legs should be straight. As soon as the left leg crosses the bar it is brought down; the landing is made on this foot, and the jump is completed with the body facing the direction in which the jump was started.

In secondary schools a serious attempt should be made to introduce some form of high jumping other than the scissors style. This has long been superseded, because the body is actually upright crossing the bar. The centre of gravity of the human body is situated in the abdominal cavity, and therefore in the old style the centre of gravity is about a foot over the bar. Modern styles reduce this distance by introducing a hip twist to bring the centre of gravity nearer the bar ("Eastern Cut-off"), by crossing the bar on the side ("Western Roll"), or by facing downwards ("Straddle Roll"). For these three styles a jumping pit is essential. The Eastern Cut-off is favoured by most Australian high jumpers, but it is not so effective as the Western Roll.

The latter is a more relaxed jump, and where it is properly taught the performance of a jumper is greatly improved. (Study carefully the note on pages 17 and 18 before reading further.)



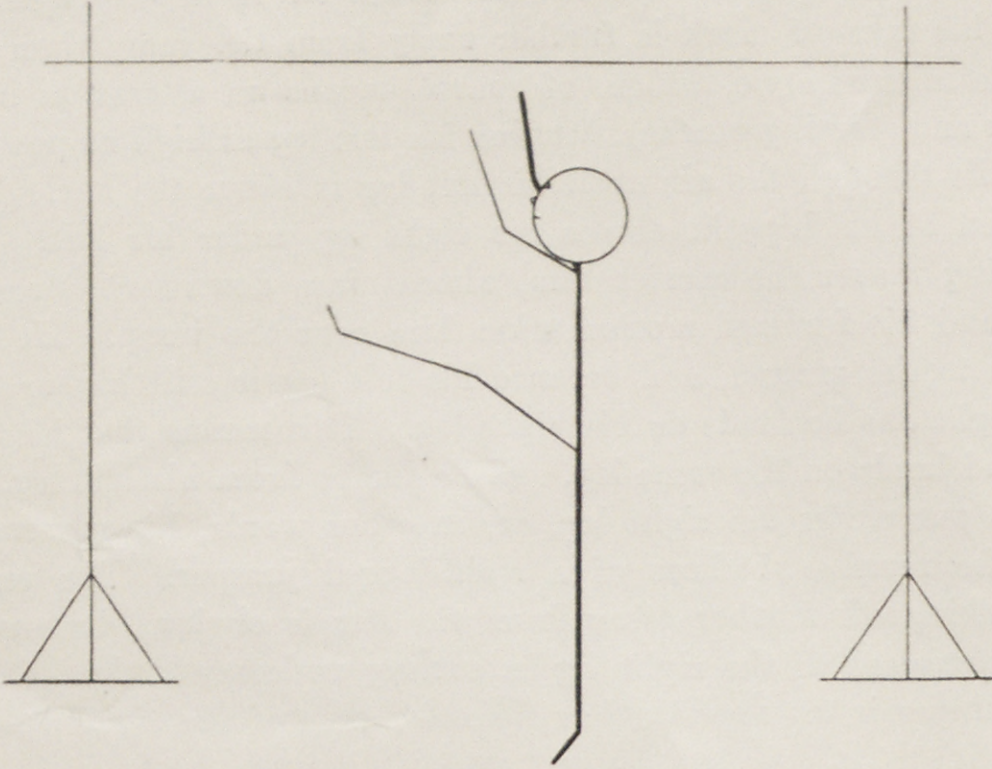
*The Eastern Cut-off.*—The jumper approaches the bar from the same side as he does in the scissors jump, but the run is more from the front than from the side. He takes off from his right foot (but his take-off mark is further away from the jump than it is in the scissors style, which, of course, means an alteration in his check and starting marks), flinging his left leg as high as possible; he sails through the air until his left leg is above the bar. With a twist of his hips he shoots his right leg under his left. This twisting movement carries him, almost face downward, over the bar, and his forward motion takes him over the jump. He then drops to the ground, and because his left leg is still higher than his right one he lands on his right leg. This means that he takes off and lands on the same leg. If he jumps from his left leg, this leg is put under his right leg, or, in other words, his movements are the reverse of those of a right-legged jumper. The reason for taking off further away from the bar is obvious, because of the movement of the right leg in cutting underneath the left. If the jumper is too near the bar the movement of the right leg may upset it.



*The Western Roll.*—The jumper approaches his take-off at an angle of 45 degrees, but from the opposite side to that he used for the scissors jump. His starting, check, and take-off marks should be at the same distance from the bar as in the scissors jump. As his right foot (for a right-legged jumper) hits the take-off mark, he leans strongly over the right leg and kicks his left leg



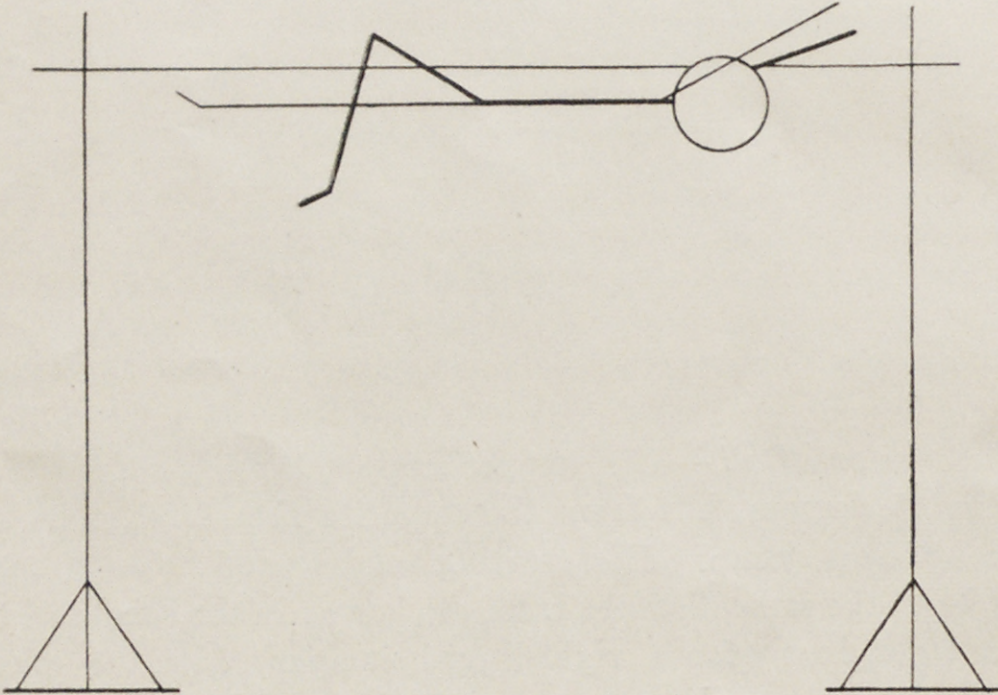
upward; it can be straight, but is usually bent. As in the cut-off method he sails up toward the bar, but with a tendency to lean to the right. He kicks his right leg up to his left, and this move-



Take-off for Western Roll

(The right side is shown in darker outline)

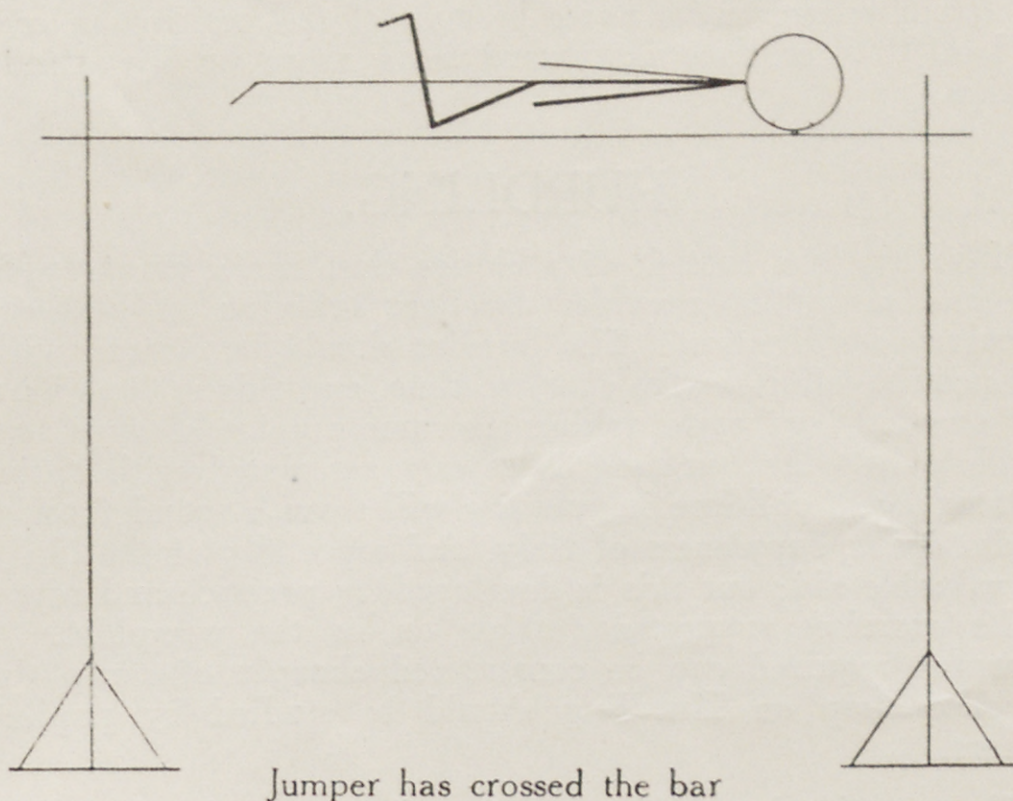
ment brings him on to his right side. The right leg comes to rest against and under the left leg, but it is bent at the knee. The jumper is now lying on his right side over the bar. Swinging



Jumper approaching the bar



his arms down, he thrusts his trunk forward; this carries him clear of the bar, and, as he begins to fall, he rolls to face downward,



allows his arms and legs to drop ahead of his trunk, and lands on all fours in the pit.

*The Straddle Roll.*—The straddle roll is not sufficiently well known in Australia to attempt a description. It is a modification of the western roll in that the jumper uses his right leg in its upward kick to turn the body face downward when it crosses the bar. More will be heard about the leap later, for it is the greatest saver of inches yet invented.

NOTE:—These techniques are difficult to set down on paper. Athletic coaches and sports masters in high, higher elementary, or central schools are urged to read them aloud, very slowly, so that each detail will be clear.

Boys may be interested in the reasons for the special names for the different methods. America has always been the home of good high jumpers. The first attempt to change the scissors style was made in the eastern universities of the United States of America. As it was a cut-off, it was called the "Eastern Cut-off."

The roll came into prominence because it was used by jumpers of the western universities, notably Southern California. For a long time the International Athletic Federation frowned on the new jump, because it was wrongly believed that the head was lower than the hips and the feet when the bar was crossed.



Photos, however, proved this to be wrong, and the style quickly proved its worth when heights up to 6 ft. 10 $\frac{1}{4}$  in. were cleared. The straddle derived its name because of the position in crossing the bar, that is, face downward in a more or less straddling position.

## HURDLING.

Hurdling is a branch of athletics that has a great appeal to boys and girls. It provides excellent training in balance and muscular co-ordination. The hurdles should be cleared with the least possible effort in the shortest time, and this is done by using the "straight leg" style, taking the same number of steps between the obstacles. As hurdling is closely associated with sprinting, the training of children in running will form a sound foundation. Besides speed, suppleness of body, and especially of the hip joint, is a valuable aid; but this is developed by practice and repetition of the exercises suggested further on in the pamphlet. The apparatus required can be constructed cheaply of scrap timber. The film strip on Hurdling should be studied by pupils and teachers.

The practice by children of 8 and 9 years for jumping and running will form an excellent basis for hurdling. Children of 10 years of age can be taught to hurdle correctly.

### *Method.*

*Front Leg.*—As the child starts the take-off for the hurdle, with the back leg supplying the drive, the front leg is lifted forward and upward in the direct line of advance and skims the hurdle with the knee straight or almost straight. As soon as the thigh of the leading leg has crossed the hurdle, the leg is snapped down so that the foot will reach the ground quickly.

*Body Position.*—The body is inclined forward from the hips, the chin is in front of the forward knee, and the eyes are fixed on the rail of the next hurdle. The shoulders must be held squarely to the front, and the body must not bend sideways toward the rear leg as the hurdle is crossed.

*Rear Leg.*—This is the most difficult part. The back leg, after it imparts the thrust to the body from the ground, is allowed to trail until the forward leg is well over the top of the hurdle. It is then quickly bent up, with the thigh at right angles to the trunk and the leg at right angles to the thigh. The forward leg and thigh are parallel to the ground, the knee of the back leg is lifted high, and the back foot is swung through to take the first stride after crossing the obstacle.



*Arms.*—The leading arm—if the right leg is forward it will be the left arm—is stretched well forward with the palm down. The other arm may be held forward also—this is the most modern method, or it may be bent with the hand close to the side. On landing, the sprinting angle is assumed.

*Starting.*—The sprinting start is used; the distance from the first hurdle should be varied as set out on page 22. When the child begins to run he straightens up more quickly than the sprinter, and runs as fast as possible to the first hurdle. If the teacher observes that the child is shortening stride or hesitating, he should encourage the child to crouch start with the other foot forward. The take-off distance is not important with children; the majority will take off about 3 feet from the hurdle.

*To Teach Hurdling.*

1. Children should be encouraged to bound from either leg over a low rope. The front leg should be straight.

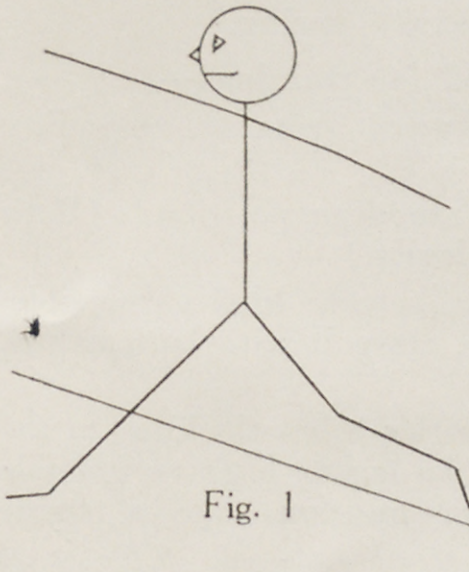


Fig. 1

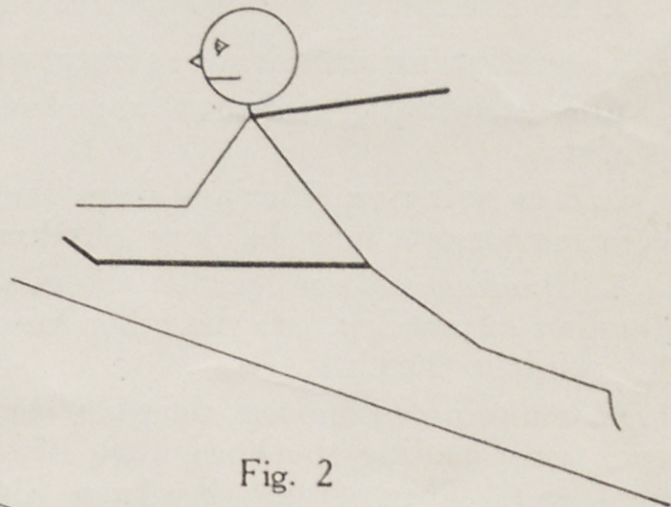


Fig. 2

2. The bound is done again, this time raising the leading leg and bending the body down toward it.

3. If the right leg is the leading leg, the left arm should be extended to balance the body, while the right arm should be bent and the hand kept close to the side.

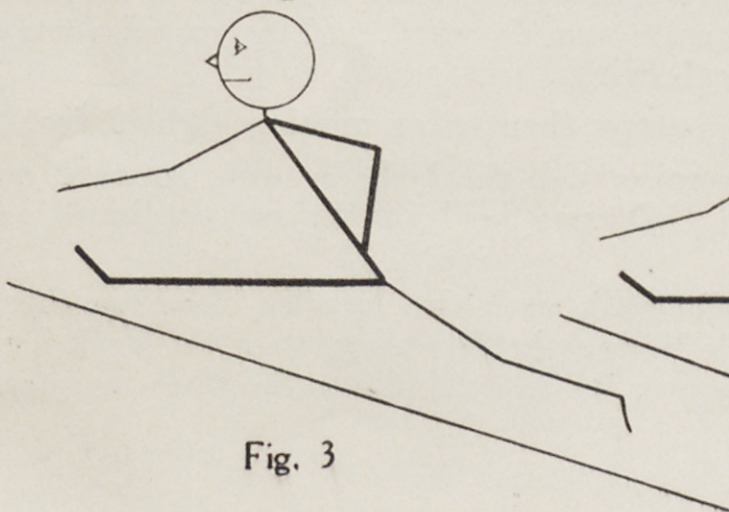


Fig. 3

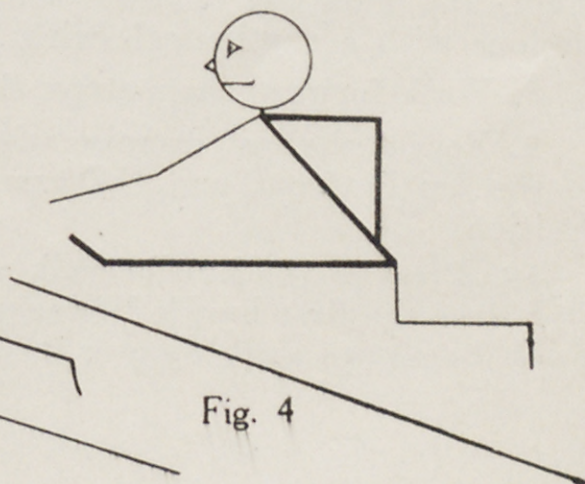


Fig. 4



4. The back leg is curled up so that the thigh is almost at right angles to the trunk. In crossing the hurdles the legs are in these positions (see Fig. 4).

5. When the right leg comes down after crossing the hurdle, the hurdler takes three steps forward and then takes off for the next hurdle. There must be a definite rhythm of "one, two, three, over! one, two, three, over!" The distance between the hurdles should be decreased until the child can put in three strides between them. The distance can then be gradually lengthened until the hurdles are approximately 9 yards apart.

### *Exercises for Training.*

Preparatory exercises are necessary for the following purposes:—

1. To increase flexibility in the hip joint.
2. To improve the abdominal muscle tone.
3. To develop leg muscles and to cultivate spring.

The following exercises are suggested for training:—

1. Leg swinging forward and backward from the standing position.

2. Leg swinging sideways from the standing position. (Both these movements may be done rhythmically.)

3. Standing on one leg, lift the other knee as high as possible. Standing on one leg, lift the other knee, clasp it with both hands, and pull it to the chest.

4. Standing on one leg, clasp the other leg below the knee, at the same time bending the knee, then lift the leg as high as possible sideways. Then from the knee high position take a stride forward.

5. From the lying position lift one leg and touch the foot with the opposite hand.

6. From the lying position, with feet astride, raise the trunk and bend forward to touch one foot with the opposite hand.

7. Rest one foot on hurdle, press the trunk down on the forward thigh, and push the opposite arm forward. (This exercise may be done with a rhythmical swing.)

8. Walk forward three steps, then swing one leg high in front.

9. Repeat the last exercise with the body bending forward on to the leg in front and the arms held in the correct hurdling position.

10. Practise the hurdle walk with two hurdles close together. Step over the first hurdle lifting the front leg, then the back leg. Walk three steps and step over the next hurdle in the same manner.



11. Walk up to the side of a hurdle and lift the trailing leg over the hurdle.

12. Sit on the ground in the correct hurdling position, press the trunk down rhythmically to push the opposite hand to the forward leg. Then circle the forward knee with the elbow.

13. Practise over one or two hurdles.

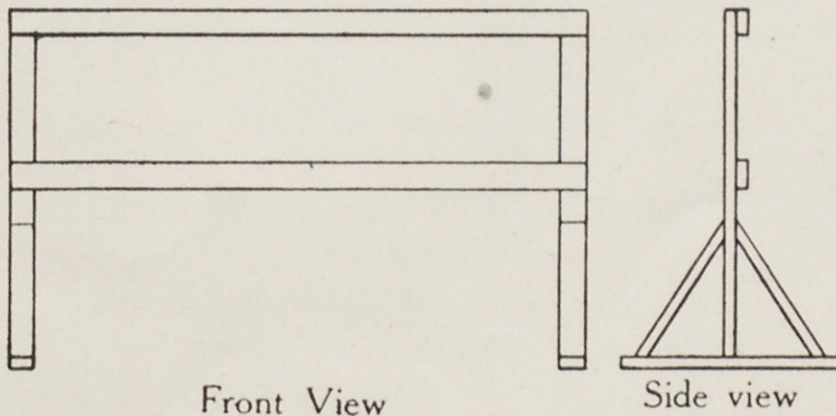
14. Practise "Through the Window" jump (see film strip on Hurdling).

### *The Hurdle.*

The following heights for hurdles are suggested for children of different ages:—

Age.	Boys.	Girls.
10 years .. ..	2 feet .. ..	2 feet or 1 ft. 9 in.
11 years .. ..	2 feet .. ..	2 feet
12 years .. ..	2 feet .. ..	2 feet
13 years .. ..	2 feet .. ..	2 feet
14 years .. ..	2 ft. 6 in. ..	2 ft. 3 in.
15 years .. ..	3 feet .. ..	2 ft. 3 in.
16 and 16+ years	3 ft. 3 in. ..	2 ft. 6 in.

The hurdle may be constructed of scrap timber (2 inches x 1 inch is ideal), and it may be up to 4 feet wide. If it is wider it is harder to move about, and the timber would have to be bought in specified lengths. When making a hurdle construct it with strutted feet as shown in the diagram. It can be strengthened



with angle pieces between the two cross bars if desired, but the hurdle as shown in the diagram will prove very serviceable.



*Setting-out the Hurdle Track.*

The hurdles are placed on the running track ( four or five "flights" will be sufficient), at intervals of from  $7\frac{1}{2}$  yards to 9 yards apart. The intervals will be shorter for the junior boys than for boys of 14 years, and should be such that the children can "3-stride" the obstacles; in fact, the hurdles can be placed about  $6\frac{1}{2}$  yards apart until the children fit the three strides in easily, then the intervals can be lengthened. The approach to the first hurdle should be approximately 12 yards for the juniors and 14 yards for the seniors. The run-in may be the regulation 15 yards.















