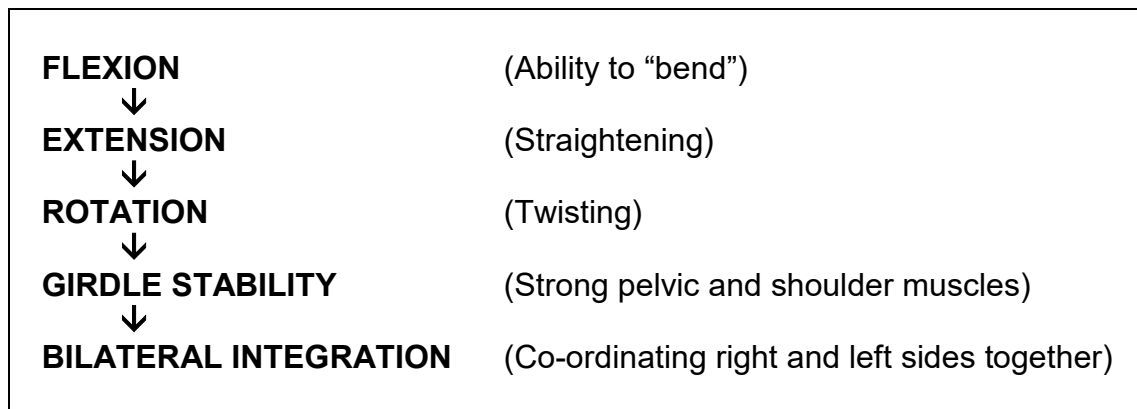


THE DEVELOPMENT OF MOVEMENT PATTERNS

WHY THIS IS IMPORTANT:

There is a set sequence of basic movement patterns that our body develops.

If full development is not achieved then there will be incomplete progress. The fundamental motor foundations need to be strong to allow higher level skills to develop. Its like building a house on sand. If the foundation isn't strong and provides insufficient support the building won't be strong and sturdy. The sequence of movement goes as follows.



FLEXION/EXTENSION

- The muscles along the front and back of the body must work with equal strength to ensure the trunk can stay in an upright position with gravity. (Generally the "flexor muscles" are positioned on the front of the body, whilst the "extensors" are on the back).
- Balance of these two muscle groups is also important to develop midline stability. This is to ensure that our trunk stays upright when we reach across our midline and does not lean in the direction of the arm movement.

ROTATION

- The flexor and extensor muscle groups in the trunk need to be working well before we can twist appropriately.
- This skill is a pre-requisite for crossing the midline of the body.

GIRDLE STABILITY

- The muscles in our body need to be balanced at an appropriate level of muscle tension (this is called '**tone**'). It allows for good postural stability whilst allowing us to move fluently.

“

- Often the children who seem “poorly co-ordinated” have low muscle tone. This is when the muscles are relaxed or weak and excessive effort is required before movement can happen.

- Weakness is often more marked at the shoulders and hips. This is called ‘**weak girdle stability**’. The results of this include:
 - poor strength against resistance, e.g. pushing and pulling activities
 - poor smoothness and grading of movements
 - difficulty with large movements against gravity, or maintaining static positions, e.g. arms out to the side, or standing on one leg
 - children often slump forwards onto the desk, or flop back in chairs to improve their support
 - fine manipulative tasks become more difficult because the “core stability” is not present

BILATERAL INTEGRATION

This refers to the use of both hands together and the co-ordination between arms and legs.

It is easier initially to do the same movements with each hand, or side of the body; then progress to the skill of doing a different movement with right and left hands/arms/legs. For example, catching a large ball with 2 hands. Pushing a table out of the way or lifting a chair to move it across the room.

A more complex movement is when one hand does a movement while the other hand does a different movement. For example, one hand holds the jar while the other screws off the top, threading a needle or holding paper still with one hand while writing.

More complex even still is one arm doing a movement while the opposite leg does a different movement. For example, marching, running or skipping (not with a skipping rope).

THE IMPORTANCE OF BILATERAL INTEGRATION

- Bilateral integration develops co-ordination between the right and left sides of the body.

“

- It leads to establishing consistent hand dominance.
- It contributes to improved communication between right and left sides of the brain.

DIFFICULTIES YOU MIGHT OBSERVE IN CHILDREN WITH POOR BILATERAL INTEGRATION

- Difficulty in, or avoidance of, crossing over the middle of their body, e.g. –
 - right arm over the left side of the body
 - left hand across the right side of the body

(You may see this when a child is unable to catch a ball with both hands when it is thrown to the side).
- Difficulty in, or avoidance of, tasks that require co-ordinated skill of both hands, e.g. –
 - cutting paper with scissors
 - using a knife and fork
 - pouring water into a glass
- Difficulty with the concept of left and right orientation.
- Reversals in writing.
- Difficulty in co-ordinating arms and legs in sequences of movement, e.g.
 - star jumps
 - non-symmetrical marching

Activity ideas to promote each “movement pattern” are given next. If a child has difficulty with one area, then spend time on the activities in that section before moving on to the next.

You might find it beneficial to score how many a child can do / how long a child can maintain that posture, to demonstrate progress.

“

FLEXION ACTIVITIES - ANIMAL SHAPES

1. BEAR



Assume creeping posture, progress forward and backwards, moving arms and legs of same side simultaneously. Keep the head down.

2. MONKEY



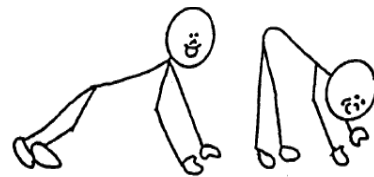
Run forwards with both hands on the floor and the knees slightly bent.

3. ELEPHANT



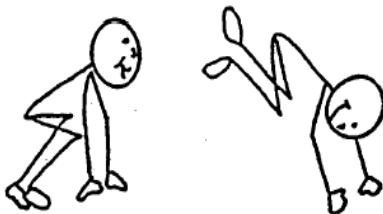
Bending forward at the hips, allow the arms to hang limp. Big lumbering steps should sway you from side to side as you walk, imitating an elephant and his trunk.

4. INCHWORM



Support the body by hands and toes, keeping body in straight line. With hands remaining stationary, walk the feet towards the hands, taking tiny steps. Keep the legs straight. Next, keeping the feet stationary, walk the hands forward in tiny steps until the first position is reached.

5. MULE KICK



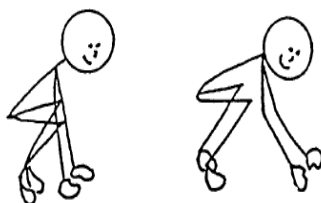
Drop to a squat position. Place the palms of the hands on the floor, between the knees. Bear weight on the hands and kick the feet backwards vigorously. When the feet hit the ground, stand erect and take two steps forward. Repeat sequence

6. DUCK



Do a knee bend. Place your hands around your ankles. Walk forward, one foot at a time, but remain in the knee-bent position.

7. BUNNY



Squat low on heels and place hands, palm down, on the floor. Move the hands forward, and bring the feet forward between the hands with a little jump.

8. ROOSTER



Bending forward at the waist, grasp the ankles. Keep the knees as straight as you can. Walk forward.

“

HEDGEHOG

Lying on back, make a ball (as small as you can)



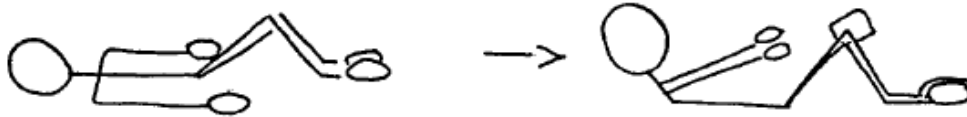
- lift head up first
- cross arms in front of chest
- lift legs up with bending of hips and knees
- child to count up to 20

- Do activities on hands and knees, e.g.

- puzzles
- brick work/construction
- messy play

SIT UPS

- lie on back with knees bent
- look to ceiling
- hands to knees – bend forwards
- can they reach beanbag on knees?



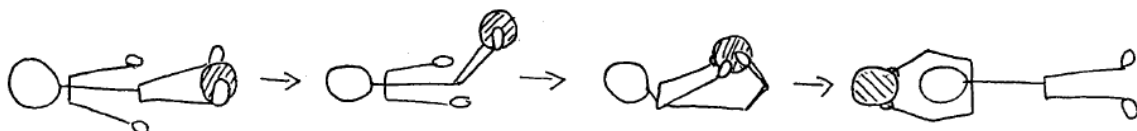
FLOOR-BASED BALL GAMES

- lie on back with legs raised
- using large **soft** ball, kick away from body



This can be done with another child, aiming slowly and carefully at feet!
Can child hold on to ball with feet and lower to the floor?

MONKEY FEET:



- lie on back, ball placed between feet
- child to hold on to ball with feet, and raise to waist level
- transfer ball from feet to hands
- lower legs and bring ball over head
- reverse process

“

Can be graded from large to small ball.

- “Leapfrog” –
 - use a rope to make a straight line on the floor
 - position the child onto “all fours” – hands and feet on the floor
 - child to move hands over the line
 - then jump both feet over the line
 - continue for the length of the rope, crossing over with hands, then feet.

EXTENSION ACTIVITIES

1. Animal Shapes

1. BIRD



Stand on tiptoes and wave the arms slowly up and down. As the “wings” move faster, run tippy-toe around as if you were flying. As the flapping slows down, the bird comes slowly to a stop.

2. HORSES GALLOPING



Gallop forward with hands held simulating grasp on reins. Change and lead off with opposite foot.

3. HORSES PRANCING



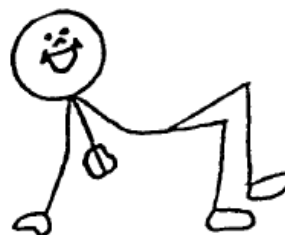
Stand straight, with hands held simulating grasp on reins. Lift knee high with toes pointed. Just as the foot touches the ground again, lift the other knee vigorously. Repeat in a rhythmical motion with forward momentum.

4. SEAL



Assume a prone position on the floor. Push the body up with extended arms. Walk forward with the arms while the feet drag behind.

5. CRAB



In a squatting position, reach backward with the arms and put both hands flat on the floor behind you. Raise up until the head, neck and body are in a straight line. Walk or run in this inverted position.

- Balance bead bag on tummy
- Walk sideways (aim for x 10 steps forwards, backwards, each side).

PREPARATION FOR EXTENSION ACTIVITIES:

Lie nice and straight. Lie on your tummy with a straight trunk, with shoulders and hips even, legs straight and feet neutral.



Rolling Games

Child to try and maintain extended posture – legs, arms and body straight.

- Roll over piles of cushions
- Roll down side of hill or mound
- Roll the child up firmly in a blanket and see if they can roll out quickly.
- Roll over to knock down targets e.g. skittles, pile of bricks or empty cardboard boxes etc.
- Rolling races with friends.



Lie flat on tummy, propping up on arms. In this position you can -

- play games
- throw bean bags/balls at objects or into containers
- roll ball to a partner who is lying opposite



“

Commando Crawling Games

- i.e. child creeps along on his/her stomach as low as possible, like a soldier
- under a mat or sheet
 - through tunnels
 - around an obstacle course
 - with a bean bag on their head



Scooter Board Games

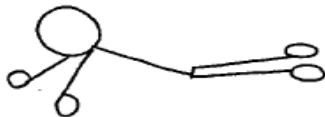
Child lies on tummy over a scooter board.

- pulling along a rope
- Push against a wall with straight arms
- Have scooter board races
- Make an obstacle course to manoeuvre around



Press Ups

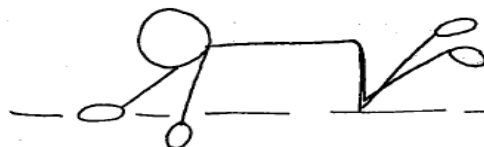
- Initially lie on tummy and push up on arms only (so that elbows are straight)



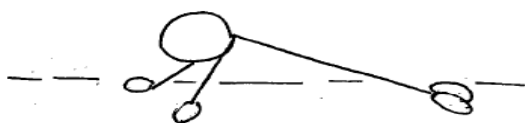
- Progress to child positioning self on hands and knees. Lower then raise shoulders and head



- As above, but with feet crossed and off the floor



- Full Press-ups



Aeroplane/Superman

- Lie on tummy with upper body raised, arms positioned in air, away from body, slightly forwards (aim for shoulder level).
- How long can child stay like this for? Aim for 20 seconds.
- Roll a ball to the child in this position for them to roll it back to you.
- Play skittles in this position.



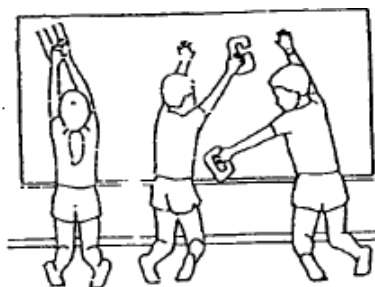
Games in high kneeling

When kneeling, make sure that:

- head is in midline
 - shoulders are even
 - trunk is straight
 - knees are under hips
- “High walk” ten steps forward, backward and to the sides
 - Can the child keep balance in this position with both arms above head?
 - “Walk” around an obstacle course – you can make this more difficult by balancing something on your head or by holding something.



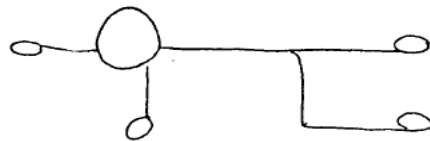
- If you have black/whiteboard on the wall, this is a good activity



- Try using both hands together, and one hand – reaching in all directions, including crossing the midline, e.g. using the right hand to reach to the left side of the board, and vice versa.
- Throwing a ball into a net/container which is set at a higher level than you. Throw balls to other children who are also in a high kneeling position.



- Child positioned on all fours - hands and knees on the floor.
- Raise one arm so it is straight at shoulder height.
- When balanced, child to raise one leg (opposite leg to arm!)
- Swap to opposite leg and arm. If this is too difficult initially, just raise arm and leg separately.
- Try to maintain position for 20-30 seconds, keeping a steady posture.

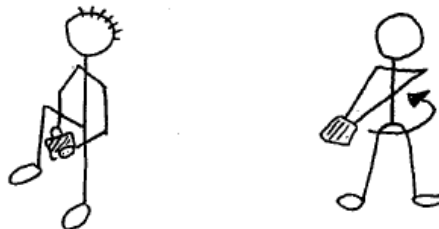


CROSSING MIDLINE

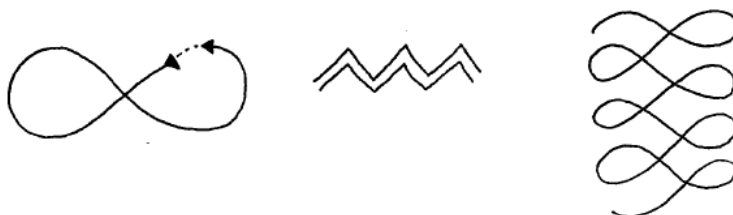
(Linked to Rotation Activities)

This is needed prior to the child being able to integrate right and left hands together. Go to the Rotation Activities provided in this pack if this is an area of difficulty for the child.

1. Position equipment/objects so the child has to reach across midline to grasp an object, e.g. right hand stretching across to left side for a beanbag.
2. Passing an object, e.g. a ball or a beanbag, around the body in one direction, then the other, using both hands. Try going under/over the body – passing a small ball or beanbag under one leg, then the other.



3. Drawing **large** mazes and patterns on a whiteboard or blackboard. Ensure that the child does not move with the pattern – let the arm “do the work”.



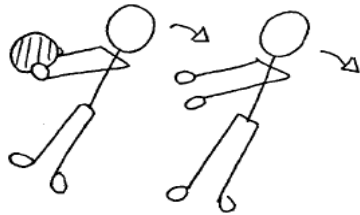
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4. "Simon Says" game – copying positions that cross midline, e.g. right hand on left shoulder – increasing speed of copying positions.

ROTATION ACTIVITIES

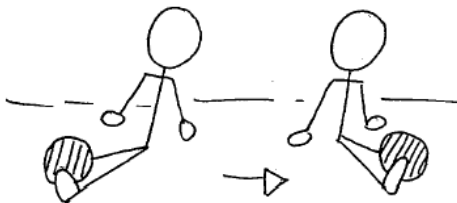
1. Child to lie on back.
Position balls on one side of the body for the child to reach over and pass to the other side of the body.

Try this with a whole line of children passing to each other.

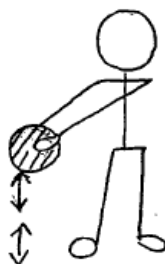


- Have a race between two teams.
- Grade with different size and weights of ball (large + light = easiest)

2. Try the above but with feet doing the passing (much more difficult!)

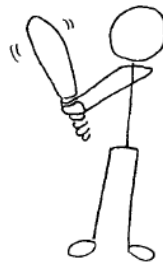


3. Play catching/throwing games, but ensure you throw to one side of the child. Child to catch with both hands together.



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4. Bat and ball games, e.g. during P.E./Games. Swing the bat from one side of the body with both hands.

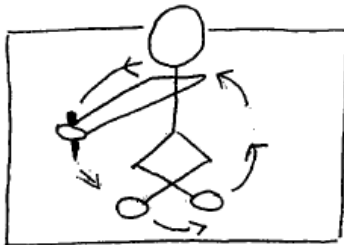


5. "Leapfrog"



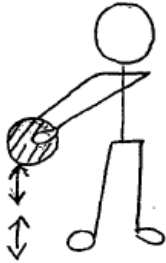
- Rope on the floor.
- Place hands over the rope.
- Leapfrog legs over rope to join hand position.
- Continue crossing over rope in this way.

6. Child to sit on paper (large sheet).
Child to draw a circle around the body by reaching round.
Try to ensure that child does not move bottom from floor.

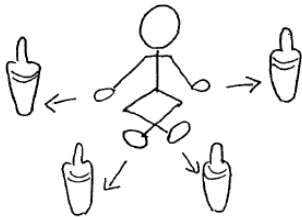


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7. Child to bounce and catch a ball from one side to the other.
Make sure the child catches with both hands together.



8. Child to sit on the floor.



- Child to aim beanbags at skittles without changing position.
- Ensure skittles are positioned around the child to encourage rotating the trunk.

9. Rolling games (as in Extension Activities – No. 2)

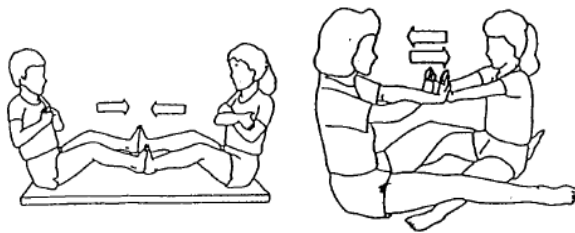
10. Twister game.

“

GIRDLE STABILITY ACTIVITIES

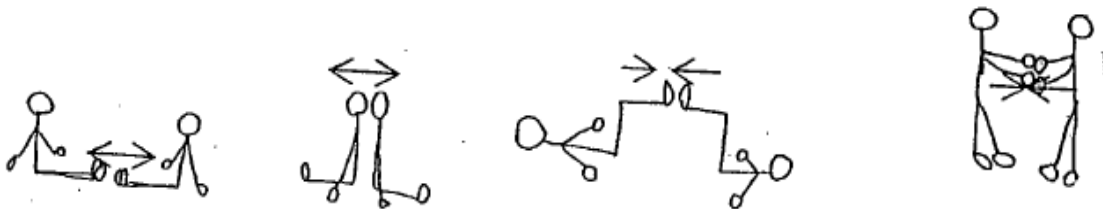
(Most of previous activities + general “heavy”) work

1. Pushing/Pulling Games



- Pushing each other's hands
- Pushing each other's feet
- Try this when in high kneeling

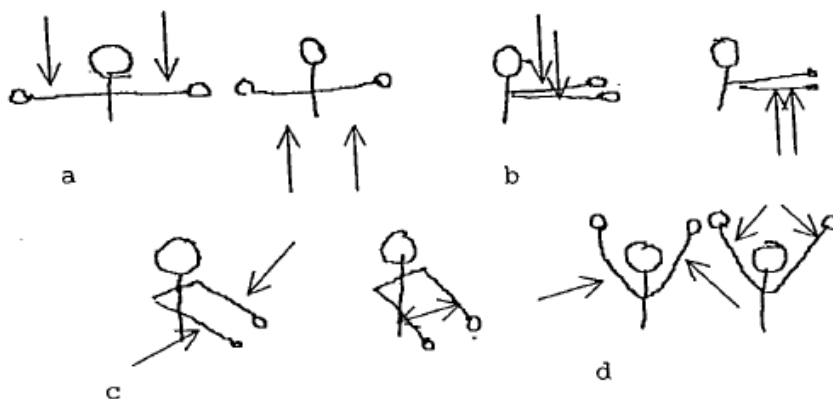
- Resistive Games: push against a partner/wall with different



- Try pushing against each other's feet with arms folded against the chest/against each other's hands, whilst sitting cross-legged.

2. Shoulder Resistive Exercises

- Apply force as shown in the pictures
- Try to resist the pushing force in the opposite direction

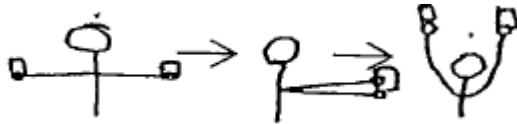


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3. Small weights

Hold weight in static position

- Hold small weight up in different positions.
Try to sustain the position and count 1,2,3 for as long as possible.



- use something light to hold initially, e.g. bean bag
- progress to objects slightly heavier, e.g. pencil case
- carry objects balancing on top of each other – how many bean bags on top of each other?

4. Slow movements (the slower the better!)

Keep arms
straight up
beside body



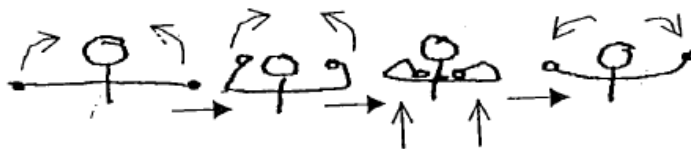
Count 1 – 10 and
move fingers to
shoulder



Always keep
elbow up



Re-open it
slowly with
arms straight.



5. “Tug of War” – e.g. with rope / blanket / hoop.

6. “Crabwalk” Games:

- races
- football (kicking with feet)
- navigation around the furniture, etc.

7. Climbing activities – e.g.

- up ropes
- up wall bars

8. Crawling games - through obstacle course, e.g. -

- over objects,
- under things
- through them or inside them.

“

BILATERAL INTEGRATION ACTIVITIES

1. Clapping Games (graded from easy to more difficult)

The following clapping patterns are presented in a developmental sequence, beginning with individual clapping patterns and progressing to clapping patterns with partners.

They work well with almost any song and the timing can be altered to fit a particular rhythm.

The most simple form of clapping is to repeat the same one-step patterns without crossing the midline of the body. Next in order of difficulty is to vary the clapping sequence, maintaining the same rhythm, again without crossing the midline.

Variations include assuming different body positions and clapping different body parts. Clapping variations which include crossing the body's midline are most difficult and are presented last.

One-Step Clapping Pattern

- Clap own hands to music or rhymes
- Slap own thighs (knees, shoulders, elbow)

Two-Step Sequence

- Clap own hands; slap own thighs
- Clap own hands; tap own shoulder
- Clap own hands; tap own head.

Two-Step Sequence with Repetitive Action

- Clap own hands twice; slap thighs twice
- Clap own hands three times; slap thighs three times.

Three-Step Sequence

- Clap own hands once, slap thighs once, slap the floor once
- Clap own hands, slap backs of hands on thighs, slap the floor.

Right and Left Hands Take Turns

- Clap; slap left hand on left thigh; clap; slap right hand on right thigh

“

- Clap; slap left hand on left thigh; slap right hand on right thigh, clap

Crossing the Midline of the Body

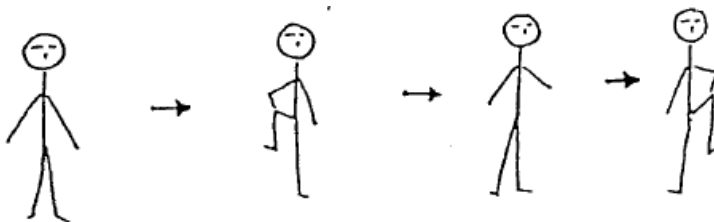
- Clap; cross arms and slap thighs
- Clap; slap left hand on right thigh; slap right hand on left thigh; clap

Hand Clapping with a Partner

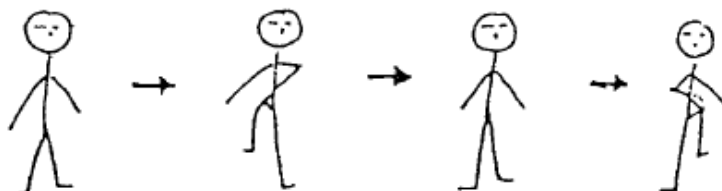
- Clap own hands; slap partner's hands
- Clap own hands twice; slap partner's hands twice
- Clap own hands once; slap partner's hands, then own thighs
- Clap partner's left hand with own right hand; then partner's right hand with own left hand.

2.

- Hand touches knee on same side:
 - change body parts each time you do this
 - play as "Simon Says"



- Spinning two hoops, one on each arm make circles with arms, holding streamers –
- Hand touches knee on the opposite side. (If the child cannot cross midline, go to "Midline" sheet).



“

-
- 3.
 - Cross ankles, then cross hands to touch opposite ankles, knees, hips, shoulders, ears –
 - complete in sequence, crossing over at each body part
 - select body parts randomly
- 4 Cut out right and left foot shapes or dots from carpet or foam. Place the the foot shapes in different patterns. Have the child step left – right, or jump with two feet together –
 - you could use hoops to jump into
 - hopscotch game
- 5.
 - a) jump arm and leg of same side together in front/behind
 - b) star jumps
 - c) jump with opposite arm and leg together
- 6. Reciprocal skipping may need to be taught in a graded manner, with each movement broken down into small steps.
 - child to hop on one leg
 - child to hop on other leg
 - child to hop x 1, then step x 1, continue
- 7.
 - Sitting at desk, tap desk with index finger and floor with foot –
 - same side together
 - tap opposite finger and foot together
 - Imitating different patterns of hand movements, e.g.
 - tap on lap R,L L; R; L L or more complicated patterns.

8.

- Trace the following patterns on a black board with both hands, with emphasis on simultaneous movements (both hands together and in the same direction)

Symmetrical patterns:



Asymmetrical patterns:



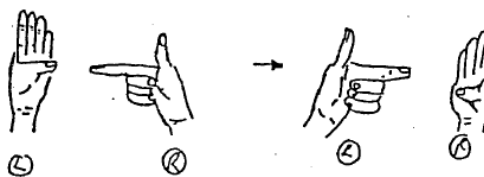
9.

- Tap tummy with one hand, moving in a circular path above the head with the other hand.



10.

- Alternating hand gestures e.g. “gun and target”



e.g. child to copy partner's sequence of fists open/shut.

11. Skipping with Rope

- Place rope in front of child (child holding each end)
- Child to step over

“

- c) Assist child to bring rope behind body/over head to initial position
- d) Child to jump with both feet over rope

Go back to c) and repeat d).