

Volume

5



GUIDE

Nurturing Early Learners
A Curriculum for Kindergartens in Singapore

MOTOR SKILLS DEVELOPMENT

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Introduction

Children naturally love to move and play. The learning area Motor Skills Development seeks to develop children's motor skills and knowledge of health and safety through participation in physical activities. As they participate in these activities, they not only develop physical skills, but also grow in confidence and self-esteem to fulfill the demands placed on them later in life.

Children are competent movers. With good modelling and instruction, they can be more skillful in controlling and coordinating their body movements such as cutting, threading, walking, bending, throwing and catching. Given sufficient time to practise, children will become more competent in demonstrating the motor skills and applying the skills in other situations or games. They may not display matured movements in all the motor skills by the end of Kindergarten 2 but with exposure and the opportunity to practise the skills, they will be able to move more effectively and efficiently.

Children love having their teachers play with them. The active involvement and enthusiasm of teachers motivate children to move. Thus teachers should participate actively in the activities and show that being physically involved in the activities can be fun for everyone. Through these activities, children will find the joy in movement. This lays the foundation for them to continue to be active and more inclined to incorporate regular physical activities later on in life.

Chapter

1



Motor Skills Development in the Early Years

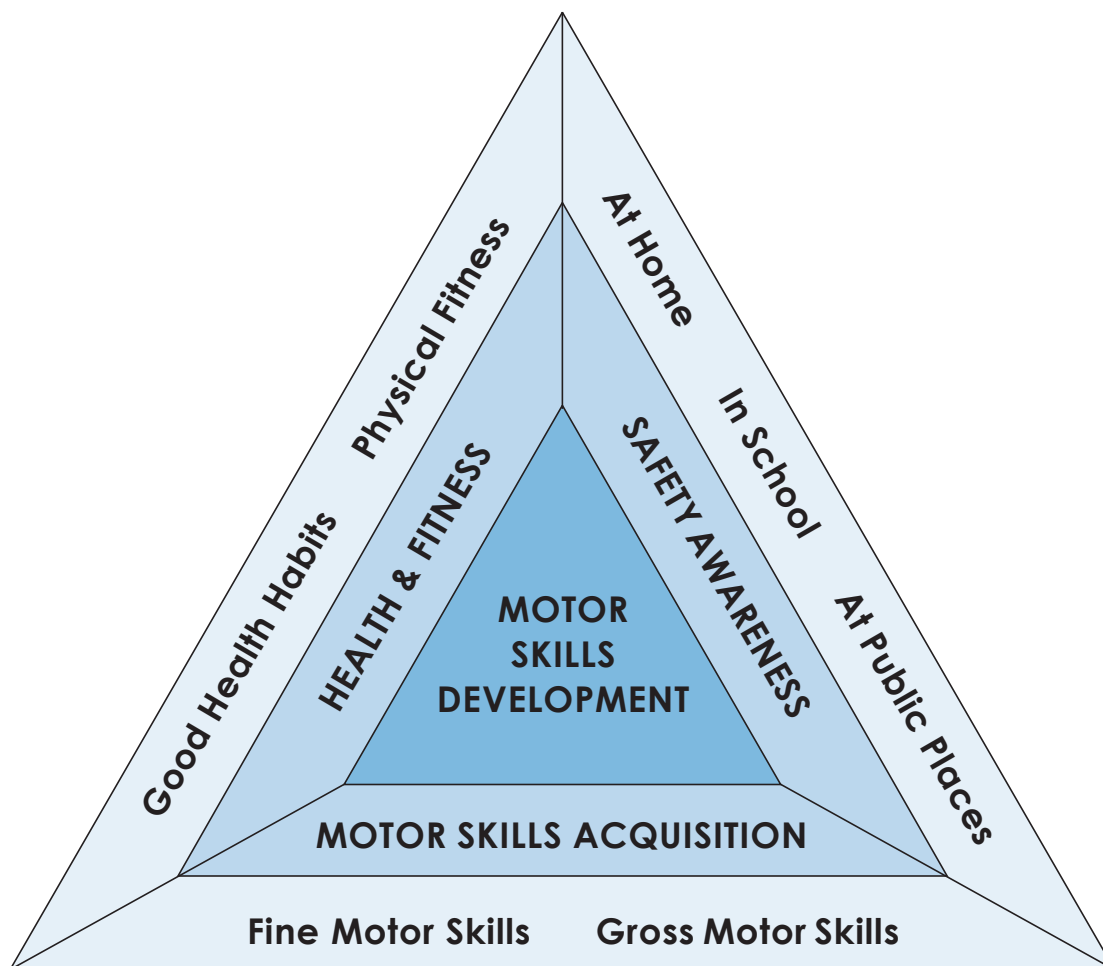
Motor skills development refers to the progressive change in motor behaviour throughout the life span with the change being sequential and age-related. Not all children are able to demonstrate the matured stage of a particular skill within a few lessons but it is important to introduce the skills, show them how the skills look like and provide many opportunities for practice. Teachers need to modify or adapt activities to suit different age groups and select equipment that is age appropriate. They should teach skills from simple to complex and break down the instruction into smaller steps.

Three Strands of Learning in Motor Skills Development

Motor Skills Development includes three strands of learning:

- Motor skills acquisition
- Health and fitness
- Safety awareness

In the strand of motor skills acquisition, children develop the basic skills for them to be efficient and effective movers. The strand of health and fitness aims to promote children's understanding of good health habits and develop their physical fitness to achieve healthy growth. Lastly, children learn about the importance of safety and how they can prevent danger at home, in school and at public places in the strand of safety awareness. The figure below shows the three strands of learning in Motor Skills Development.



Motor Skills Acquisition

Fine Motor Skills

Fine motor skills involve coordination and control of the wrists, fingers and hands in carrying out a specific task with precision. Acquisition of fine motor skills helps children to be more independent in carrying out daily activities such as cutting with a pair of scissors and applying glue on a piece of paper. Strengthening the fine motor skills also allows children to perform self-help tasks such as tying their shoelaces and fastening buttons on their clothes. When children have well-developed fine motor skills, they will be able to use drawing, writing and art tools such as pencils, chinks and paintbrushes more efficiently.



Fine motor skills help children in carrying out self-help tasks such as putting on their socks and shoes.



Writing requires good control of the hands.



Well-developed fine motor skills allow children to be skilful in using their fingers to create art works.

Children should be given ample learning opportunities to perform a range of tasks to develop their fine motor skills. In general, control of the muscles progresses outwards from the centre of the body to the more distant body parts. For example, children usually develop the muscles of their trunks and shoulders earlier than their legs and feet which are further from the centre of their bodies. As such, children should be given opportunities to use their hands to carry out different tasks such as tearing paper, kneading dough and building block structures during the initial stage of fine motor skills development. When they gain more confidence in using their hands, they will exercise higher precision in using their fingers to manipulate objects such as scissors, shoelaces, zips and buttons.



Activities such as stacking building blocks and tearing paper help to develop children's hand muscles.



Strengthening hand muscles helps children to be more precise in performing more complex skills such as cutting and threading.

Gross Motor Skills

Gross motor skills involve the use of the large muscles in the arms, legs and torso during movement. Using the large muscles, children are able to perform the fundamental movement skills comprising locomotor, non-locomotor and manipulative skills.

Teachers can help children to have a better understanding of how they can move using the four movement concepts adopted from the Movement Framework by Rudolf Laban (1879-1958). The four movement concepts are:

- Body awareness – focuses on what bodies can do when moving
- Space awareness – focuses on where bodies are moving
- Effort awareness – focuses on how bodies are moving
- Relationship awareness – focuses on with whom bodies are moving

The table below describes the types of gross motor skills and movement concepts in the Movement Framework.

Motor Skills			Movement Concepts			
Locomotor	Non-locomotor	Manipulative	Body Awareness	Space Awareness	Effort Awareness	Relationship Awareness
Crawling	Balancing	Tossing	Locomotor skills	Use of personal and general space	Use of time	How parts of the body relate to one another when moving
Walking	Bending	Catching				
Running	Turning	Throwing	Non-locomotor skills	Move in different directions	Use of force	How the child relates to people and objects
Sliding	Curling	Rolling				
Jumping	Stretching	Bouncing	Manipulative skills	Move on different pathways		
Hopping	Twisting	Kicking				
Leaping	Rising	Striking				
Galloping	Sinking					
Skipping	Rocking					
	Swaying					
	Pushing		Move on different levels			
	Pulling					

When planning an activity, teachers should focus on a gross motor skill in body awareness with at least one of the other three movement concepts, (i.e. space, effort or relationship awareness). For example, a teacher may plan an activity that focuses on exploring the galloping skill in a zigzag pathway (body and space awareness) and progress into galloping with a partner (body and relationship awareness). A variety of activities can be generated from the combination of a gross motor skill in body awareness with one of the other three movement concepts. This allows children to explore the same gross motor skill in many ways. From these learning experiences, children explore moving in different ways and learn new vocabulary to describe their movements.

Body Awareness

When children develop body awareness, they are able to recognise what the different body parts can do and how to make the parts move. Children show considerable differences in the rate of acquiring motor skills due to a variety of environmental factors such as opportunities for practice and the amount of time exposed to an outdoor setting that encourages movement. For example, a five-year-old child may display a more matured running skill with upper body leaning slightly forward and coordinated limb movements but another child of the same age may show the beginning stage of running skill with the body almost upright and arms swinging slightly across the front of the body.

Body awareness encompasses three gross motor skills. Given the opportunity to practise and refine their motor skills, they will move more effectively and efficiently and be able to enjoy physical activities as part of their lifestyle later.

Locomotor skills involve movement of the body in a horizontal or vertical direction from one place to another in a fluid coordinated way. Examples of locomotor skills include walking, running, galloping, hopping, leaping, skipping, jumping and crawling.

Non-locomotor skills involve movement of the body in the same place. Examples are balancing, bending, twisting, stretching, rocking, swaying, turning, pushing, pulling, rising and sinking.

Manipulative skills involve controlling the hands, feet and other parts of the body in managing objects such as bouncing a ball, striking with a foam bat, throwing and catching a beanbag.



Locomotor skill - hopping



Locomotor skill - jumping



Non-locomotor skill - twisting



Non-locomotor skills - curling and stretching



*Manipulative skills -
tossing and catching*



*Manipulative skills -
throwing and catching*

Space Awareness

Children develop spatial awareness as they observe their position in relation to the things and people around them while moving within their personal space (i.e. space within one's reach in a stationary position) and general space (i.e. space for everyone). They will learn to move in different directions (i.e. forward, backward, sideway, up, down, clockwise and anti-clockwise) and pathways (i.e. straight, curved and zigzag). They will have the opportunity to move at three different levels, namely the low (i.e. movement below the knees), medium (i.e. movement between knees and shoulders) and high (i.e. movement above the shoulders) levels.



Moving within general space



Catching a ball within personal space



Hopping in a clockwise direction



Walking on a straight pathway



Balancing at different levels

Effort Awareness

Children with effort awareness understand how the use of time (e.g. fast, slow, sudden, sustained) and effort (e.g. strong, light, firm, fine, relaxed, tense) affects the way they move. For example, teachers can get children to explore moving using strong and forceful actions by stamping their feet as they move within a play area. Next, the teachers can get the children to skip lightly.



Skipping using light and relaxed steps



Walking slowly on "bucket stilts"

Relationship Awareness

Relationship awareness focuses on whom the body moves with. It involves learning how one part of the body relates to another during movement (e.g. above, under, apart, together, behind, in front of). It also involves interacting and moving with people (e.g. behind, in front of, together, alongside, close to, away from, leading, following, individual, pairs, groups) and objects (e.g. above, below, over, under, through, on, behind, in front of).



Running together in a small group



Rolling a ball in pairs



Jumping off from a low height



Balancing on a beam



Crawling through a tunnel

Examples of learning experiences that allow children to explore a variety of movements and develop their gross motor skills

Balancing:

Invite children to experience how a traditional “*kacang puteh man*” balances a basket on top of his head using beanbags (*relationship awareness*) as they walk (*body awareness*) in general space (*space awareness*). To extend their learning, get children to explore balancing their beanbags on different parts of the body (e.g. shoulder and elbow).



Balancing a beanbag on the head while walking

Galloping:

Ask children to imagine that they are “happy horses” after they have visited the Singapore Zoo and get them to gallop (*body awareness*) using quick and light steps (*effort awareness*). The activity can be extended by asking children to imagine themselves as “angry horses” and get them to change their galloping movements to slow and heavy steps (*effort awareness*).



Galloping like a “happy horse”

Tossing and catching:

Get children to practise tossing soft rubber quoits (*body awareness*) above their heads (*relationship awareness*) and catching them with both hands. The activity can be extended to pairwork (*relationship awareness*) that allow them to work with their partners in throwing and catching the soft rubber quoits (*relationship awareness*).



Tossing and catching a soft rubber quoit

Health and Fitness

Through their involvement in physical activities, children develop components of fitness such as agility, coordination and flexibility. Physical fitness is an essential part of children's learning as it affects their performance in sports and games. For example, how far and how fast a child rides a tricycle is related to his muscular strength and endurance.



A child develops muscular strength and endurance while cycling.

The process of acquiring motor skills and developing physical fitness provides a natural context for children to understand the need to exercise regularly, maintain a healthy weight and choose healthy snacks and drinks.

Children also practise good personal hygiene (e.g. covering the mouth while sneezing) which is important in helping them to develop good health habits. In addition, children learn about how the environment has an impact on their health and they should exercise social responsibility in maintaining a clean and healthy environment around them.



Children practise the good habit of washing hands before and after food.



Children learn to take responsibility in keeping the environment clean.

Safety Awareness

As children are involved in many hands-on activities, they need to practise safe behaviour that will protect themselves and others around them. An example of a safe practice in the classroom includes proper ways of handling sharp tools such as scissors, tweezers and pointed sticks.

Children also need to be reminded of the rules for appropriate play, especially when they are outdoors. These rules include:

- Refrain from pushing their friends
- Take turns while playing
- Keep away from the slides and swings when other friends are playing on them

Besides practising safety in school, children need to learn about safety at home and at public places. Teachers should help them understand the dangers of playing with fire, electric sockets and sharp items when they are at home. Children will also need to have a good understanding of safety practices at public places such as:

- Crossing a road safely
- Putting on seatbelts when in a car or staying seated when in a bus
- Having an adult companion when in a swimming pool

Summary

Motor Skills Development goes beyond helping children to acquire motor skills. Through carefully planned and organised activities by the teachers, children will also develop healthy habits and fitness, and learn about safety at home, in kindergarten and at public places.



Learning Goals for Motor Skills Development

Development of fundamental motor skills enables children to be confident in their movements and helps them in many aspects of their lives. The learning goals for Motor Skills Development focus on the need to help children develop both fine and gross motor skills which affect their physical fitness, agility and body coordination. As children acquire the motor skills, they begin to understand various health and safety practices.

The examples in this chapter illustrate how teachers can provide opportunities for children to acquire knowledge, skills and dispositions of the learning goals.

Learning Goals 1 and 2

Learning Goal 1: Enjoy through participation in a variety of physical activities

Learning Goal 2: Demonstrate control, coordination and balance in gross motor tasks

Key knowledge/skills/dispositions	Examples of what children's learning and development look like...
<p>Body awareness: what the body does</p> <ul style="list-style-type: none"> • Locomotor skills (e.g. walking, running, leaping, jumping, galloping, hopping, skipping) • Non-locomotor skills (e.g. balancing, bending, twisting, stretching, rocking, swaying, turning, pushing, pulling) • Manipulative skills (e.g. throwing, catching, bouncing, kicking, striking, rolling) <p>Space awareness: where the body moves</p> <ul style="list-style-type: none"> • Use of personal and general space • Move in different directions (e.g. forward, backward) • Move on different pathways (e.g. straight, curved, zigzag) • Move on different levels (e.g. low, medium, high) <p>Effort awareness: how the body moves</p> <ul style="list-style-type: none"> • Use of force (e.g. strong, light) • Use of time (e.g. fast, slow) <p>Relationship awareness: with whom the body moves</p> <ul style="list-style-type: none"> • How parts of the body relate to one another when moving • How the child relates to people and objects 	<ul style="list-style-type: none"> • Participate in movement activities • Move around the room without bumping into the furniture and their friends • Walk up and down stairs without support, using alternate feet • Change speed (e.g. from slow to fast) while walking/running • Change directions while running • Participate in an obstacle course (e.g. going through tunnels, climbing over or under equipment) • Maintain balance while walking along a line • Balance on one foot like a flamingo • Move to a song and then 'freeze' in different positions when the music stops • Throw a ball at different levels (e.g. below the knee, at waist level, above the head) • Strike a ball with hands or equipment (e.g. plastic bat) <p><i>Note: The examples of children's learning and development are neither age specific nor exhaustive. Teachers have the flexibility to provide appropriate learning opportunities based on their children's abilities, interests and developmental needs.</i></p>

Example 1: Develop body and space awareness (non-locomotor skill and move on different levels)



Learning Objectives:

Children will

- Balance on one leg at medium level
- Develop muscular strength by balancing on one leg

Activity:

- Tell children that they are in the “One-legged Art Gallery” and imagine that there are many sculptures standing on one leg in front of them.
- Invite them to become one of the sculptures and explore different ways of balancing on one leg.
- Encourage them to create different sculptures at medium level.
- Select some children to form their sculptures while the other children walk around the “art gallery” and talk about the “sculptures” – what they think the sculptures are doing – and attempt to imitate the poses. Switch roles of children.



A child creates a “one-legged” sculpture at medium level.

Example 2: Develop body and space awareness (locomotor skill and move on different pathways)



Learning Objective:

Children will move on different pathways using different movement skills to gain a better control of their movements.

Activity:

- Call out a movement (e.g. walk, gallop, skip or hop) and get children to move accordingly along straight, zigzag and curved lines created on the ground.
- Give a signal for the children to change to another movement. On hearing the signal, the children will freeze and change their movements according to teacher's instruction.



A child walks along a zig-zag line.

Example 3: Develop body and relationship awareness (non-locomotor skill and working in pairs)



Learning Objective:

Children will bend and stretch different parts of the body to form letters of the alphabet with their partners.

Activity:


- Arrange children in pairs.
- Get them to explore forming capital letters in the alphabet using different parts of their bodies. Begin with letters involving straight lines e.g. letters 'K', 'L' and 'T'.
- Invite some children to show their letters and talk about how they have formed the letters using their bodies.
- Challenge children in forming letters involving curved lines, e.g. letters 'C', 'S' and 'O', and get them to share how they worked together with their partners to form the shapes.
- Lastly, invite children to form letters involving both straight and curved lines e.g. 'P', 'D' and 'G'.



Children bend and stretch to form letters of the alphabet with their partners.

Learning Goal 3

Learning Goal 3: Demonstrate control and coordination in fine motor tasks

Key knowledge/skills/dispositions	Examples of what children's learning and development look like...
<ul style="list-style-type: none">• <i>Manipulate objects with dexterity</i>• <i>Use eye-hand coordination to perform fine motor tasks</i> 	<ul style="list-style-type: none">• Manipulate play dough by squeezing, rolling and kneading into shapes/objects• Use glue to paste items (e.g. coloured paper, beads, ice-cream sticks) on paper• Hold paper with one hand and cut with the other• Use scissors to cut shapes with straight and curved lines• Build structures with blocks <p><i>Note: The examples of children's learning and development are neither age specific nor exhaustive. Teachers have the flexibility to provide appropriate learning opportunities based on their children's abilities, interests and developmental needs.</i></p>

Example 4: Manipulate objects with dexterity and eye-hand coordination



Learning Objective:

Children will develop fine motor skills by twisting and turning nuts and bolts.

Activity:

- Provide nuts and bolts of two different sizes and tell children to sort the bolts from the nuts.
- Get them to match and fix each bolt to a nut of the correct size.
- Increase the level of difficulty by giving children nuts and bolts of more than two different sizes.



Children develop fine motor skills as they manipulate with the nuts and bolts.

Example 5: Refine control of fingers

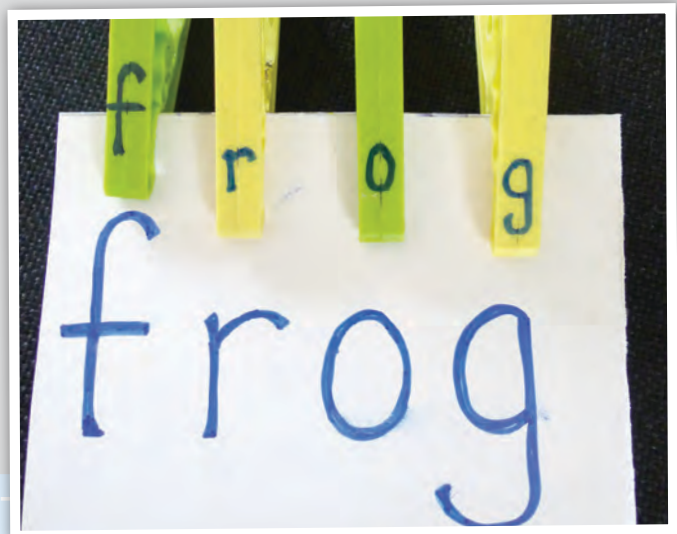


Learning Objective:

Children will manipulate clothes pegs to gain better control of their fingers.

Activity:

- Provide a box of clothes pegs with letters written on them.
- Give children each a word card.
- Get them to look for clothes pegs with the letters to form the word on their word card, and peg them to match the letters on the word card.



Children gain better control of their fingers as they engage in an activity involving clothes pegs.

Learning Goal 4

Learning Goal 4: Develop healthy habits and safety awareness at home, in school and at public places

Key knowledge/skills/dispositions	Examples of what children's learning and development look like...
<ul style="list-style-type: none">• <i>Understand the importance of being healthy</i>	<ul style="list-style-type: none">• Talk about why they need to eat well, get rest and exercise to be healthy• Identify healthy foods• Practise basic personal hygiene (e.g. wash hands before and after eating, cover nose and mouth when sneezing)
<ul style="list-style-type: none">• <i>Learn appropriate behaviour that promote individual and group safety</i>	<ul style="list-style-type: none">• Listen to and follow simple rules/instructions during a game• Talk about how to be safe when at home, in school and at public places (e.g. when boarding the school bus, crossing the road, playing at the playground)• Talk about the importance of fire safety and road safety <p><i>Note: The examples of children's learning and development are neither age specific nor exhaustive. Teachers have the flexibility to provide appropriate learning opportunities based on their children's abilities, interests and developmental needs.</i></p>



Example 6: Promote personal safety while playing



Learning Objective:

Children will learn about rules they need to follow during play to ensure safety.

Activity:

- Put children in groups of threes to form “Buddy Cars”. Get them to stand in a line with the first child as the “driver” and the rest as “passengers”.
- Before the activity, involve the children in deciding on the signals to indicate “start” and “stop”.
- Explain the rules for this activity:
 - a) Listen to the signal to start moving.
 - b) Listen to the signal to stop.
 - c) Move in one direction as everybody else.
- Give the signal to start moving and encourage them to move within the play area safely.
- Give the signal to stop and get the children to freeze.
- Let children take turns to be “drivers” and “passengers” and repeat the activity.
- After the activity, gather the children to talk about their experience when moving around in their “Buddy Cars”. Ask if there was any collision during the activity and how they resolved the problem. Facilitate a discussion and highlight how they can work together to move safely within the play area.
- Repeat the activity. Encourage children to move slower and remind them to take precautions to ensure everyone is playing safely (e.g. give a verbal warning to their friends or wait for their friends to pass before moving in order to avoid any possible collision).
- When children are able to move safely within the defined space, challenge them to play this game in a smaller play area.



Children follow the rules as they move around in their “Buddy Cars” within the play area safely.

Example 7: Cultivate good eating habits



Learning Objective:

Children will be more aware of how they should make healthier choices of food.

Activity:

- Show children the “Healthier Choice Symbol” (HCS) and explain the significance of the symbol.
- Bring them to a supermarket and get them to look for food products with the HCS.
- Get children to plan a healthy snack for a class picnic.
- Carry out the class picnic and talk about their choice of snacks.

Summary

Teachers play an important role in helping children to achieve the learning goals for Motor Skills Development. The aim of this learning area is to develop children's motor skills and introduce health and safety knowledge so that the children can take an increasing responsibility for their own fitness, hygiene and safety in the later years.





Strategies for Motor Skills Development

Planning for Motor Skills Development requires as much time as any other learning area. Teachers should plan a range of different activities to develop the different aspects of the children's physical abilities. Activities should be progressive and built upon the skills that the children are able to do, from simple to complex. Each activity should be designed purposefully with specific learning objectives and allow children to have a fun and enjoyable experience.

Strategies to develop children's motor skills include:

- Using explicit teaching
- Using games
- Using fitness stations

Using Explicit Teaching

Explicit teaching involves teachers explaining how to perform a skill with demonstration so that children can see how the skill is executed and process the movement in their minds before execution. In developing children's motor skills, teachers show how a skill is carried out before allowing children to attempt and practise. Before children start the activity, ask them questions to ensure that they have understood. Teachers may stay with the children to support their learning by giving feedback and encouragement.



Teacher shows how to perform the buttoning skill and the child puts what she has observed into practice.



Before carrying out a gross motor activity, teachers should start with a warming up activity. Warming up activities aims to increase children's heart rate so that they are ready for the main activity. Appropriate warming up activities will also reduce the risk of injury. Teachers should select an activity that is purposeful and related to the main activity. For example, if the main activity requires the children to run, the warming up activity should include stretching of the thigh and calf muscles. It is also a good practice to carry out cooling down activities to allow the body to slow down gradually to a comfortable level after rigorous activities. Warming up and cooling down activities may include stretching exercises, walking, jogging and playing simple games. Refer to Annex A for suggested stretching exercises.

Children's gross motor skills can be developed using the following four steps:

Step 1: Introduce a new skill through a demonstration

Demonstrating the skills accurately with clear instructions. Before demonstration, teachers should ensure that they are visible to all children and tell them what to focus on during the demonstration. For example, teachers can say *"Look at how I keep my eyes on the beanbag as I toss it up"* and *"See how I turn my body as I twist"*.

Step 2: Give teaching cues

Teaching cues are instructional statements which communicate the key actions involved in performing a specific skill that helps children to perform the skill more effectively. Verbal prompts such as *"lift up your right leg"* and *"keep your eyes on the target"* help children to pay attention to how they should move. For example, in teaching children the striking skill, the following cues will help children perform the skill more effectively:

Teaching Cue	Descriptor of Skill
"Left foot in front and keep the eyes on the ball"	Stand in a sideway position facing the target and focus on the ball which is the target.
"Swing the bat forward"	Swing the bat in a horizontal plane.
"Follow through"	Rotate the body as bat swings forward.

Invite some children to demonstrate the skill or ask questions to ensure that they have understood before the start of the practice. Keep the instructions short and concise to allow more time for children to practise the skill.

Refer to Annex B for descriptors of gross motor skills that can be used as teaching cues.

Example: Using teaching cues to help a child develop the striking skill.



"Left foot in front and keep the eyes on the ball"



"Swing the bat forward"



"Follow through"

Step 3: Provide opportunities for practice and give feedback

Provide ample opportunities for children to practise and apply the motor skills. During the activities, teachers should either be participating with the children or actively facilitating and supporting those who need help. Teachers should also be giving regular feedback. Specific feedback such as “Meiling is landing softly after her jump” and “Ahmad is keeping his eyes on the balloon as he catches it” helps children understand what they have done right and how they can improve further. Non-verbal feedback such as showing a “thumbs-up” and nodding of head will also encourage children to persist in their learning of a skill and instill a sense of achievement when they are able to perform the skill.

Step 4: Allow children to apply the skill

After acquiring the skill, get the children to apply the skill in a relay or a group game to reinforce the skill learnt.

An example of explicit teaching of balancing skill in a class

Miss Neo is the teacher of K1 Love class. She brought her class to the Music and Movement room and asked, “Remember we read the book ‘Jack and the Beanstalk’? Today we’ll pretend that we are Jack and we will be making our way to the giant’s castle.” Miss Neo showed the children an obstacle set up in front of the class and told the children that they have to walk across a “bridge” to get to the giant’s castle.

Before her demonstration, Ms Neo asked the children to observe how she walked across the “bridge”. She stepped onto one end of the obstacle and walked across the “bridge” with confidence while keeping her balance.



The children observe a demonstration of the balancing skill before practising it.

After the demonstration, she asked the class what they had observed. Ai Bin put up her hand and said, "Teacher, you are walking on the bridge with your arms 'opened up'." Miss Neo replied, "Ai Bin, that's a wonderful observation. I was balancing myself on the bridge with my arms stretched outwards." She asked the class if they know why she was doing that. Ahmad answered, "To balance." Miss Neo said, "That's right. Today, we will be learning how to balance ourselves while crossing a narrow bridge." She explained, "To do that, first, you will need to keep your eyes on where you are stepping and walk slowly on the bridge with your arms stretched out for good balance." Before allowing the children to practise the skill, she asked them questions to check on their understanding and reinforce the teaching cues (i.e. "keep your eyes on where you are going" and "stretch out your arms for balance").



The teacher emphasises the teaching cue, "keep your eyes on where you are going".



When children were practising the skill, Miss Neo walked around the class to observe the children carrying out the activity. She gave support to those who needed help and encouraged those who had shown progress.

During outdoor play at the playground, Miss Neo observed how the children walked on a balancing beam and assessed their performance. After the class, she recorded her observations so as to track the children's progress over time.

The teacher provides support to a child who needs help when practising the balancing skill.

Using Games

Playing games is a great way to help children enjoy practising a specific motor skill. Group games and relays require children to interact with their peers and encourage them to cooperate and develop teamwork. Games can also be used to inject fun and enjoyment and add variety to the warming up and cooling down activities. The following are examples of games that children can enjoy while acquiring motor skills.

Example 1: Parachute game



Learning Objective:

Children will learn to toss a ball as a group and cooperate with each other during parachute play.

Activity:

- Play the “Parachute” game by getting children to stand around and hold the edges of the parachute with both hands. Get children to create small “waves” and slightly bigger “waves” with the parachute.
- Place a beach ball in the middle of the parachute and encourage the children to toss and catch the ball with the parachute.



Children practise tossing skill as they make small “waves” with the parachute.

Example 2: Cat and mouse game



Learning Objective:

Children will apply the sliding skill in a game.

Activity:

- Play the “Cat and mouse” game by arranging children in groups of six.
- Assign one of the children to be the “mouse” and another child to be the “cat”.
- Get the “mouse” to put on a sash for easy identification and hold hands to form a circle with four other children. The “cat” will stand outside the circle.
- Give a signal for the “cat” to try tagging the “mouse” on his/her shoulder. The other children protect the “mouse” from the “cat” by sliding in a clockwise or anti-clockwise direction with their hands joined with the “mouse” at all times.



Children apply the sliding skill in the “Cat and mouse” game as they try to protect the “mouse” from being tagged by the “cat”.

Example 3: Germs game



Learning Objective:

Children will play a game as warming up for a running activity.

Activity:

- Play the “Germs” game by assigning a child to be the “germ” and another child to be the “doctor”. For easy identification, the “germ” will hold a red ball and the “doctor” will hold a green ball.
- Give a signal and get the “germ” to run around the play area attempting to tag the rest of the children with the red ball.
- Children who are tagged by the “germ” will have to squat down and wait for the “doctor” to save them by touching their shoulders with the green ball. Once tagged by the “doctor”, they are free to run around again.



The “Germs” game can be used for children to warm up for a running activity.

Example 4: Numbers game



Learning Objective:

Children will apply different locomotor skills that they have previously learnt in a game.

Activity:

- Play the “Numbers” game by placing some hula hoops around the play area and give enough space for children to move around them.
- Tell the children to move outside the hula hoops using different locomotor skills (e.g. walking, skipping and hopping).
- When a signal is given, every child is to freeze.
- Call out a number, e.g. ‘2’ and have the children get into groups of two inside any hula hoop. The child who is left out of the hula hoop gets to call out the next number.



Children get into pairs in the hula hoops as the teacher calls out ‘2’ during the “Numbers” game.

Using Fitness Stations

Setting up fitness stations is a systematic way of organising the children to maximise their participation in the activities. At each station, children are assigned to complete different tasks that are related to a theme and skill within an allocated time. Children rotate from one station to the next to practise the skills and complete the tasks. Instruction cards with pictures and words can be placed at each station to guide and help children to recall what they should be doing at each station. The following is an example of how fitness stations can be set up and used.

Example 5: Fitness zoo



Learning Objective:

Children will practise locomotor skills learnt previously and develop cardiovascular and muscular endurance.

Activity:

- Set up a “Fitness Zoo” with four stations – Horse Gallops, Elephant Walks, Leopard Leaps and Giraffe Runs (see table below).
- Divide the class into four groups and allocate each group to a station.
- Explain the tasks to be carried out at each station and tell them that they will start doing the task when a signal is given. Once the children are ready, give a signal to start the activity.
- After five minutes, give a signal to stop and move the children to the next station.
- Give the signal to start the next activity when all the groups of children have gathered at their next station. The activity ends when all the children have completed the tasks at every station.

Movement		Objectives
Station 1: Horse gallops	Children gallop around a given space like horses.	<ul style="list-style-type: none">• Body awareness (locomotor skill – galloping)• Space awareness (use of general space)
Station 2: Elephant walks	Children walk using strong and heavy foot steps.	<ul style="list-style-type: none">• Body awareness (locomotor skill – walking)• Effort awareness (use of force – walk with strong and heavy steps)
Station 3: Leopard leaps	Children leap over a low obstacle.	<ul style="list-style-type: none">• Body awareness (locomotor skill – leaping)• Relationship awareness (move over an obstacle)
Station 4: Giraffe runs	Children run along zigzag lines.	<ul style="list-style-type: none">• Body awareness (locomotor skill – running)• Space awareness (move on zigzag pathway)



Summary

Teachers play an important role in developing children's motor skills. As explicit teaching is used as the main teaching strategy, teachers need to demonstrate the skills and guide the children in practising the skills through the use of visual and verbal cues. They can also use games and fitness stations to reinforce children's motor skills.

Chapter

4



Organising the Learning Environment

A stimulating environment with adequate space and appropriate equipment and resources helps to encourage motor skills development through play and instructions. Space can be arranged so that small and large groups of children can play and practise the skills. Teachers should ensure that there is sufficient equipment or resources for all children to be engaged in the activities at the same time so as to reduce waiting time.

Indoor Space

Indoor space should be made conducive for children to learn and practise their fine motor skills. Tables and chairs can be provided for children to sit and play with small manipulative toys. A range of resources for motor skills development should be made accessible to children during activity time.

Suitable indoor activities that promote children's fine motor skills development include:

- Tearing pieces of paper
- Kneading play dough
- Using a rolling pin
- Cutting with a pair of scissors
- Drawing pictures and scribbling on paper with a crayon
- Dressing up a teddy bear with clothes that have buttons and zippers
- Stacking building blocks



A child practises the cutting skill at the Dramatic Play Centre.



Children apply their can-opening skill during a class activity as they prepare food for a class party.



Children make rice balls after watching a demonstration by their teacher.

Outdoor Space

Children need sufficient space to participate in sustained physical activities such as running in a relay and playing a hopping game. The intensity and duration of the activities build children's fitness as they practise and refine their motor skills. Sufficient outdoor space allows children to participate in other physical activities such as cycling, pulling a cart and climbing a structure at the playground which help to develop their cardiovascular and muscular strength. Children enjoy moving freely when they are playing in outdoor settings such as the playground, basketball court and field. The positive experiences they have while playing in an outdoor setting encourage them to continue being physically active later on in their lives.

Teachers should provide opportunities for children to engage in free play where they have a choice of activities, resources and even playmates. Teachers can also plan for learning experiences for children to enjoy physical activities with intended learning goals in an outdoor setting. For example, teachers may use the tunnel at a playground to conduct an extended activity on the crawling skill. Teachers can get children to walk on the balancing beams in a playground to help them develop the ability to maintain body equilibrium while moving. When children are more confident, teachers may challenge the children to walk sideway or step over small objects (e.g. beanbags) placed on the beams.

The playground is a common outdoor play area. Before using the playground, teachers should check for broken equipment and ensure that the equipment is safe for use. Set routines and simple safety rules for children to follow such as taking turns while playing on a slide and sliding down with their feet first. Routines help to organise the class and get the children ready for the various activities. Class rules help children to play safely and maximise activity time. When children know how to play safely at a playground, they are less likely to get hurt.



Children develop balancing skills as they use the climbers at the playground.



Children learn to take turns and play safely at the playground.

Resources for Promoting Development of Motor Skills

To have an effective motor skills development programme, a pre-school centre needs to be well-equipped with a wide range of equipment and resources. Equipment and resources selected for physical play should be age-appropriate and able to stimulate children's curiosity. There should be sufficient equipment for most or all children so that they need not have to wait for their turn and can be actively involved in the physical activities. Some of these resources can be used for other purposes. For example, teachers can use markers and cones to organise the play area and ensure children's safety. They can also plan games using parachutes, big waffle blocks and giant Jenga to build teamwork among children.

Storage of the equipment can be a challenge especially for the larger items. Whenever possible, all equipment should be stored near the activity area so that they are easily accessible for use. Involve different groups of children in collecting and keeping the equipment and resources. This helps to instill responsibility and develop a sense of ownership in children.



Children learn to develop a sense of responsibility and ownership as they collect and keep the equipment for motor skills activities.

Examples of resources and equipment for promoting the development of children's motor skills:

Purpose	Resources/Equipment
To develop fine motor skills	<ul style="list-style-type: none">• Connectors, linking cubes, waffle blocks, wooden cubes, interlocking bricks• Lacing or threading beads with thick strings• Scissors, glue, staplers and hole puncher• Play dough and accessories e.g. rolling pins and cookie cutters• Tongs, tweezers, can opener• Fabric or clothes with buttons and zippers• Children's tool set e.g. hammer, screws and screw drivers• Small items e.g. clothes pegs, rubber bands, paper clips, syringes, cotton balls, nuts and bolts
To develop gross motor skills	<ul style="list-style-type: none">• Beanbags• Hula hoops• Rubber quoits• Skipping ropes• Balancing beams• Balloons• Rubberballs of different sizes and textures• 'No bounce' balls• Mini-basketballs• Mini-soccer balls• Foam bats• Javelin foams• Baskets of various sizes

Safety Considerations

Safety is the most important consideration when planning and implementing motor skills activities. Teachers should consider the following guidelines:

- Ensure that the play area, including outdoor space, is suitable for the activity. Define the activity area clearly using cones or markers, if necessary. If there is insufficient space, children have to take turns to play.
- Ensure that all indoor and outdoor equipment, resources and materials (e.g. the rubberballs, wooden blocks and toys) are checked and cleaned regularly to make sure they are safe to be used. Look out for potential dangers such as rough splinters, sharp edges, protruding nails and loose nuts or bolts.
- Ensure that all children are medically fit to participate in the activity. Gather up-to-date information about children's health and fitness conditions from the family and take precautionary measures during activities.
- Be aware of prevailing weather conditions (e.g. rain, lightning risks or heavy haze) when conducting outdoor activities. Monitor the weather condition closely when there is a haze situation.



The teacher conducts regular checks on the equipment to ensure children's safety.



Summary

Teachers need to maximise the use of space and provide sufficient equipment and resources to allow all children to participate in a variety of motor skills activities with minimal waiting time. They also have to take into consideration safety when planning and during implementation so that children can enjoy the activities and keep themselves safe.



Observation and Assessment

Children go through the different stages in motor skills development and progress at different rates. The purpose of ongoing observation and assessment is to keep records of what the children can do and how they are progressing and working towards achieving the learning goals of Motor Skills Development.

Observing and Documenting Children's Learning

The documentation of children's learning is an ongoing process and should be spontaneous as evidence of children's learning may take place at any point of time. As it is challenging to observe a class of children constantly on the move, teachers can take photographs or video recordings to capture children at work. When assessing gross motor skills, teachers should observe how children perform a particular skill with reference to the descriptors in Annex B. In addition, teachers should be observing how children move using the movement concepts of body, space, effort and relationship awareness. Teachers can also include children's work samples (e.g. paper aeroplanes and collages) in their portfolios to showcase the development of their fine motor skills.

It will be useful to have a class profile that tracks children's progress and development of motor skills over time. Teachers need to establish the existing developmental level of each child first, then determine how they have progressed based on the learning goals set for Motor Skills Development. In addition, teachers need to assess their performance and ascertain whether the skill needs to be broken down further to help the children master it or if they are ready for the next level.

Examples of questions to keep in mind when assessing children's motor skills:

- How did the child perform a particular motor skill (e.g. skipping, throwing a ball)?
- Is the child able to move on different pathways?
- Is the child able to transit from a quick to slow movement?
- How well did the child use the general space?
- How did the child use different parts of the body to move?
- How did the child balance an object on different parts of the body?
- How did the child use a pair of scissors?
- Is the child able to knead a shape using play dough?

Examples of questions to keep in mind when assessing children's development of knowledge related to health and safety:

- How did the child make choices related to health (e.g. choosing to eat a healthy instead of an unhealthy snack)?
- Does the child follow personal hygiene practices? How is he/she doing it?
- How does the child adhere to rules and safety practices during an outdoor activity?
- Is the child able to follow the rules and play safely with his/her friends?

Examples of How Observations are Documented

Example 1



Context:

Children were involved in an activity where they wanted to build a block of HDB flats using recycled boxes. Materials provided were scissors, two rolls of transparent sticky tape and glue.

Teacher's Anecdotal Record:

- Sharifah stacked two boxes on top of each other. To keep them in place, she tried to use transparent sticky tape. However, she was not able to cut the strip of tape with a pair of scissors.
- She asked Matthew who was sitting next to her to help her. Matthew pulled the first end of the tape and cut it with a pair of scissors.
- Sharifah held the two ends of the tape and pasted it on the two boxes.

Possible Interpretation/Assessment:

- Sharifah was not able to control a pair of scissors with her hand.
- She needed more practice to strengthen her hand and finger muscles and should be taught how to grasp a pair of scissors.
- She was confident and knew how to ask for help.

What the Teacher Could Do:

1. Provide the following activities for Sharifah to learn to grasp the scissors properly:
 - Play with finger puppets, focusing on the thumb, index and middle fingers.
 - Cut imaginary pieces of paper and teach her to open and close the blades of the pair of scissors slowly, then increase the speed gradually.
2. Get her to cut a variety of sturdy materials such as straws and corners of construction paper.

3. Provide more opportunities for Sharifah to strengthen her finger and hand muscles through activities such as:

- Tearing paper
- Squeezing water out of sponges
- Opening and closing clothes pegs
- Using tongs to transfer objects from one plate to another

Documentation:

Document Sharifah's progress by including a series of photographs that show the development of her finger muscles:

- Her finger dexterity in a variety of activities, e.g. how she used a pair of tongs to transfer a piece of bread from the tray to a plate
- How she held and manipulated a pair of scissors to cut straws, paper, etc.

Example 2



Context:

An obstacle course was set up that required children to walk on balancing beams, hop in and out of hula hoops and leap over a 20 cm high crossbar. They had to demonstrate the three skills of balancing, hopping and leaping in order to clear the obstacle course successfully.

Teacher's Anecdotal Record:

- Meiling extended her arms naturally as she balanced herself and walked along the balancing beam.
- She hopped in and out of the hula hoops with smooth and well-coordinated movements.
- She paused for a few minutes before the 20 cm high crossbar. She tried leaping over the obstacle but ended up stepping on it. She finally leapt over it awkwardly after 2 more attempts.

Possible Interpretation/Assessment:

- Meiling was able to use her arms to help her balance and walk along the balancing beam with ease.
- She exhibited good body control when hopping.
- She needed more practice to build her confidence in leaping over an obstacle.

What the Teacher Could Do:

- Demonstrate the leaping skill and have Meiling practise leaping over an imaginary obstacle using the teaching cues.
- Allow Meiling to practise leaping over obstacles with different heights, beginning with very low ones such as over a piece of rope placed horizontally on the ground, before gradually increasing the height. This will allow her to experience success and build confidence.
- Give her positive reinforcement when she is able to clear an obstacle.

Documentation:

Document Meiling's progress by including a series of photographs that show how she progressed from leaping over a rope to a 20 cm high obstacle.

Example 3



Context:

Each child was given a balloon to toss and catch without letting it fall to the ground.

Teacher's Anecdotal Record:

- Pravin was able to toss the balloon upwards in a vertical manner.
- He kept his eyes on the balloon as it went up and prepared his hands for catching.
- When the balloon came down, he followed the balloon and caught it with both hands.

Possible Interpretation/Assessment:

- Pravin had good eye-hand coordination and was able to catch his balloon all the time.
- He could toss and catch 5 times consecutively.
- He was confident in carrying out the activity as his body was relaxed.
- Pravin had developed the skill of tossing and catching a balloon.

What the Teacher Could Do:

- Provide opportunities for Pravin to demonstrate tossing and catching a balloon in front of the class so he can showcase his skill.
- Pair him up with a child whom Pravin can guide in performing the task better.
- Replace his balloon with lighter or smaller balls such as a beach ball or a rubber ball so as to sharpen his tossing and catching skills.

Documentation:

Document Pravin's progress by including a series of photographs that show:

- How he tossed and caught different types of ball
- How he showed his confidence in other areas
- How he guided and played with a friend

Example 4



Context:

Children carried out the “Buddy Car” activity in pairs. They pretended to be “drivers” or “passengers” in a car. The “drivers” walked in front while the “passengers” followed behind with their hands on the shoulders of the “drivers”. The “drivers” led their partners in moving within a defined play area.

Teacher’s Anecdotal Record:

- When Wei Ming was the “driver”, he ran around the room without his “passenger”.
- As he was moving too fast, he could not slow down and collided into his classmates thrice.
- He did not apologise to his friends and they became annoyed and shouted at him to stop running.

Possible Interpretation/Assessment:

- Wei Ming did not seem to understand the safety rules during the activity.
- He did not have a good control of his movements especially when he had to stop.

What the Teacher Could Do:

- Go through the rules with Wei Ming again and highlight the importance of playing safely. Remind him about the rules during the activity.
- Focus on giving more specific instructions to Wei Ming before the start of an activity.
- Get him to move slowly during the activity and practise slowing down before a stop.
- Raise his social awareness through discussion on how others feel when they get hurt.

Documentation:

Document Wei Ming’s progress by including photographs, video recordings and anecdotal records that show:

- How he was able to control his body movement in activities that require him to accelerate and decelerate
- How he learned to cooperate with others in different play situations



Summary

Ongoing observation and assessment of children's learning and development are important aspects in Motor Skills Development because they provide information on children's achievement at each stage of their physical development. Documenting their progress over time informs teachers of children's learning needs and helps them to plan how to support children in acquiring motor skills and health and safety practices in a timely manner.



Annexes



Suggested Stretching Exercises for Warming Up/Cooling Down

Stretching exercises can be carried out as a warming up or cooling down activity. The exercises must be carried out in a slow and sustained manner so that it does not cause any injury to the spine or other joints. Joints that are meant to move like hinges which allow forward and backward movement (e.g. the knee and elbow joints) should not be rotated. Each set of stretching exercises should involve both the upper and lower body. The exercises usually start from the head to toes or vice-versa. It is recommended that teachers conduct four to five types of different stretching exercises for a proper warm up.

The following are some suggestions of stretching exercises:

Upper Body Stretch

Neck Stretch

Stand upright, turn the head to the right and hold the stretch with the left hand for about 2 to 3 seconds. Repeat the exercise on the left side.



Arms Circle

Stand upright with arms straightened and parallel to the floor. Circle the arms backward slowly from small to large circles for about 8 times. Repeat the exercise by circling the arms forward.



Sideway Bend

Stand with feet about shoulder width apart and raise left arm over to the right side of the head. Slowly bend sideways to the right for 2 to 3 seconds and repeat the bend on the left side.



Shoulders Roll

Stand upright with arms by the side. Slowly raise the shoulders towards the ears then rotate forward and down to the starting position. Carry out the forward rotation for 5 times and repeat with backward rotation.



Lower Body Stretch

Upper Thigh Stretch

Sit on the floor with soles of feet touching each other and heels pulled toward the body. Hold the toes and lower the knees slowly toward the floor. Hold the stretch for about 2 to 3 seconds.



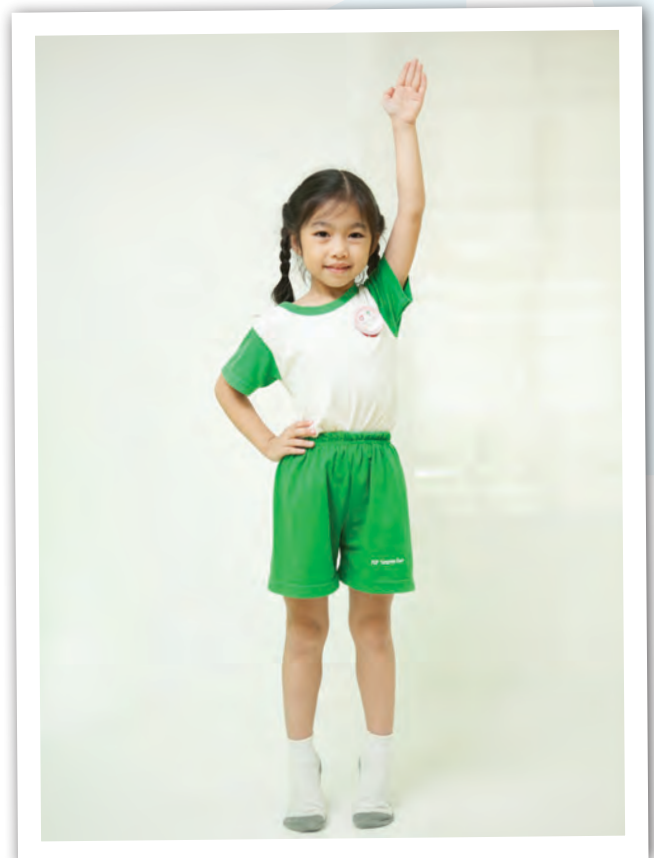
Seated L-stretch

Sit on the floor with right leg straightened and left leg bent with foot against the inside of the left leg. Reach out towards the toes of the straightened leg. Hold the stretch for 2 to 3 seconds.



Stand and Reach Up

Stand with feet about shoulder width apart and raise left hand as high as possible while standing on the toes with the back straight. Count for 2 to 3 seconds and repeat using right hand.



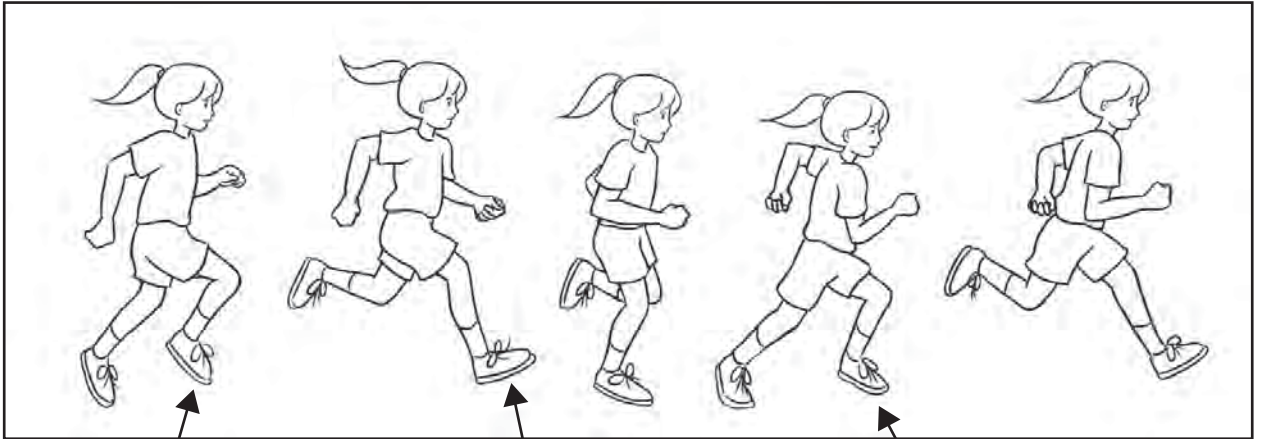
Standing Wall Push-offs

Stand two steps away from a wall with right foot in front of left. Place both hands on the wall and gently push off from it. Bend the right front knee slightly but keep the left heel on the floor. Hold for 2 to 3 seconds and repeat the stretch with left foot in front of right.



Examples of Descriptors of Gross Motor Skills

Running

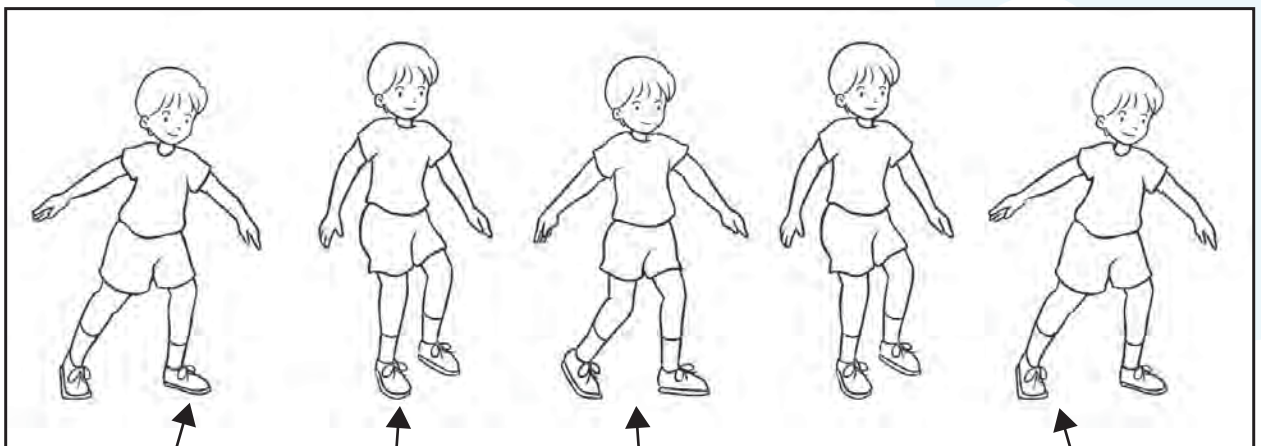


Look ahead and lean body forward with knees high

Take wide steps where both feet are slightly off the ground

Swing both arms opposite to the leg movement at about 90°

Sliding



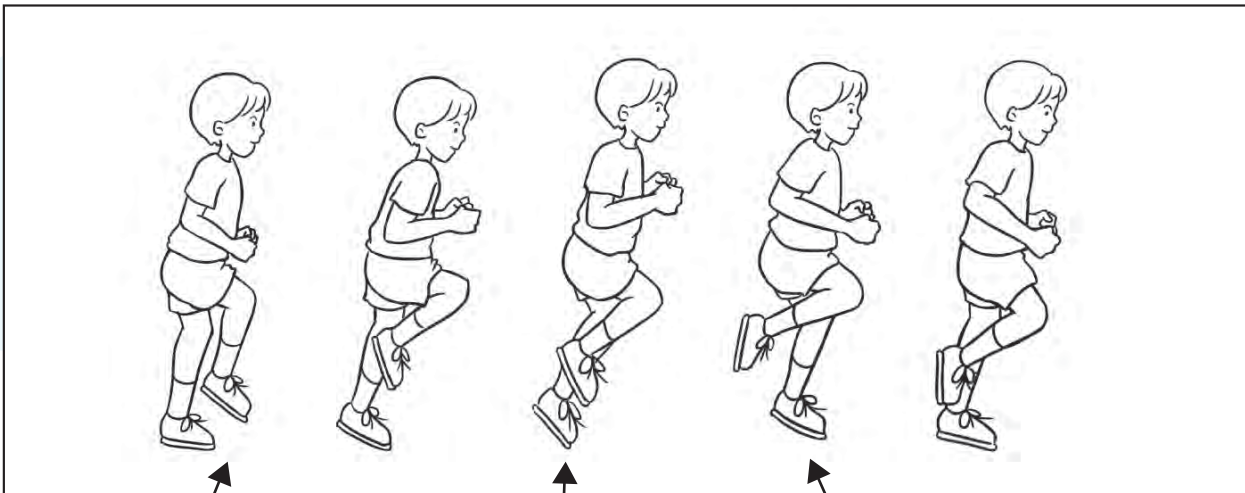
Turn body sideways and take the first step with the leading leg

Close the step with the other leg

Repeat the movements of opening the step with leading leg and closing the other leg

Move in a smooth and rhythmic manner

Hopping

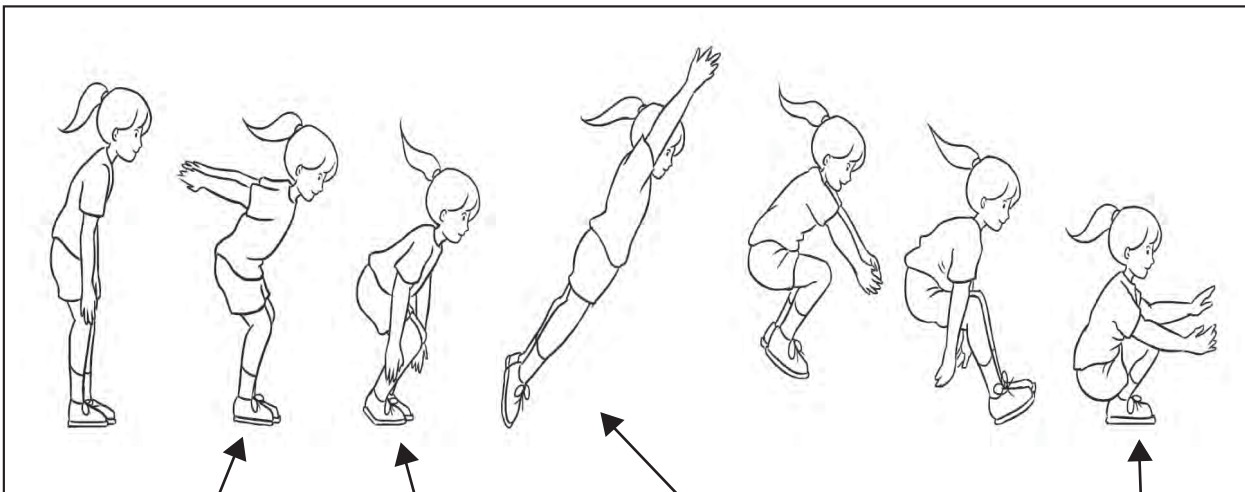


Bring up the arms to around waist level and lift up the knee of the non-supporting leg

Generate the force from the supporting leg and lean the body slightly forward

Take off and lands lightly on the supporting leg

Jumping



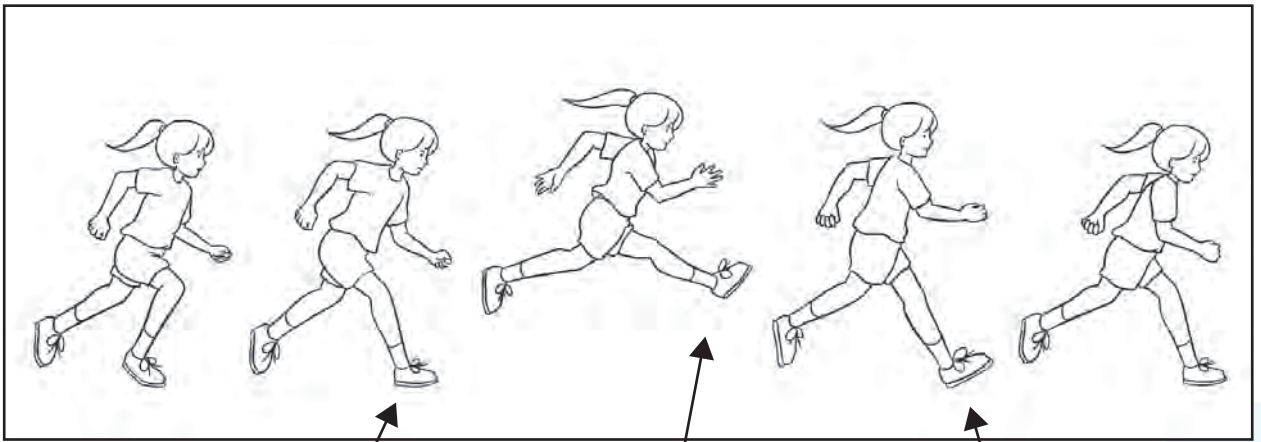
Keep the feet together, bend the knees and swing both arms backward

Keep the eyes at a target distance

Take off by extending both arms forcefully forward and upward above the head

Bend knees and land softly on the feet with a good balance

Leaping

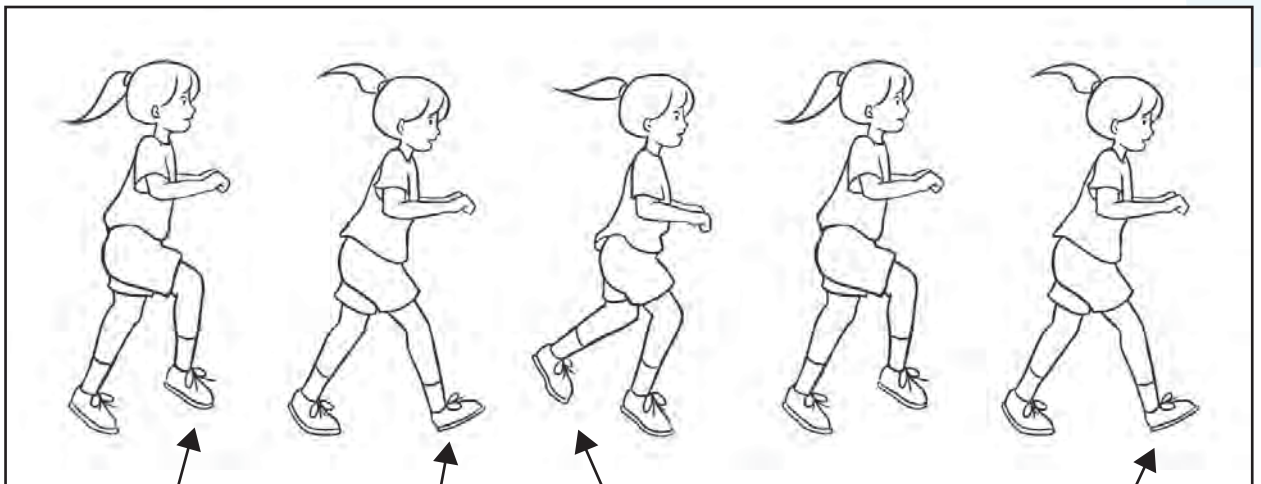


Start running
and take off
on one foot

Stretch leading leg
wide with body
leaning slightly
forward

Land on the
ball of the
foot

Galloping



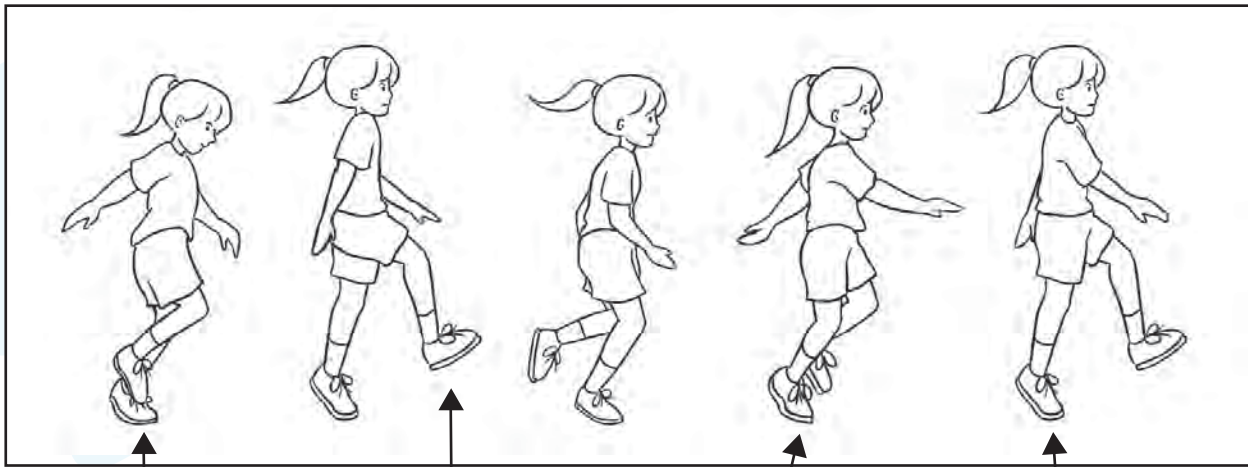
Bend the arms
to around waist
level and lift up
the knee of the
leading leg

Take a step
with the
leading leg

Back leg
follows the
leading leg

Repeat stepping
forward with the
same leading leg in a
smooth and rhythmic
pattern

Skipping



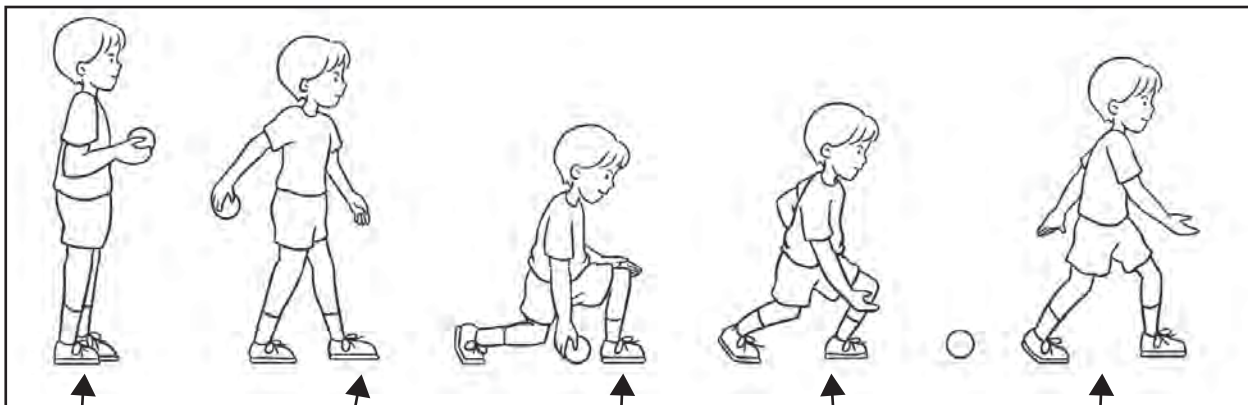
Step with
one foot

Hop with knee high
on the leading leg

Land lightly on
the leading leg

Repeat with the
stepping and
hopping actions using
the other leg in a
rhythmic pattern

Rolling



Look at the
target and
maintain eye
contact

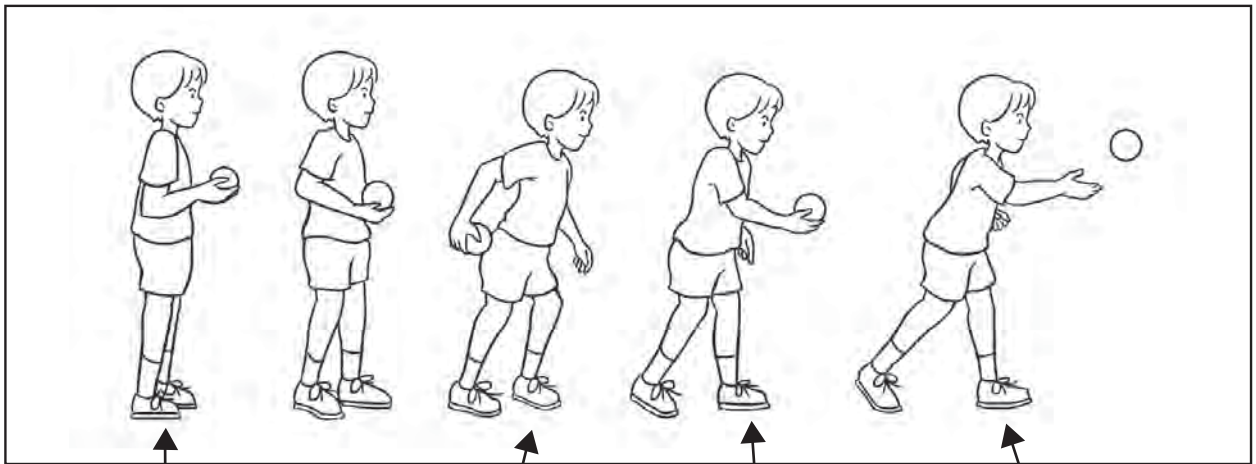
Take a step
forward with
the foot
opposite to
the throwing
hand and bring
the object
backward

Bend knees
to lower the
body

Release the
object close
to the floor
so it does not
bounce

Follow
through by
swinging the
throwing
hand slightly
upward

Underarm throwing



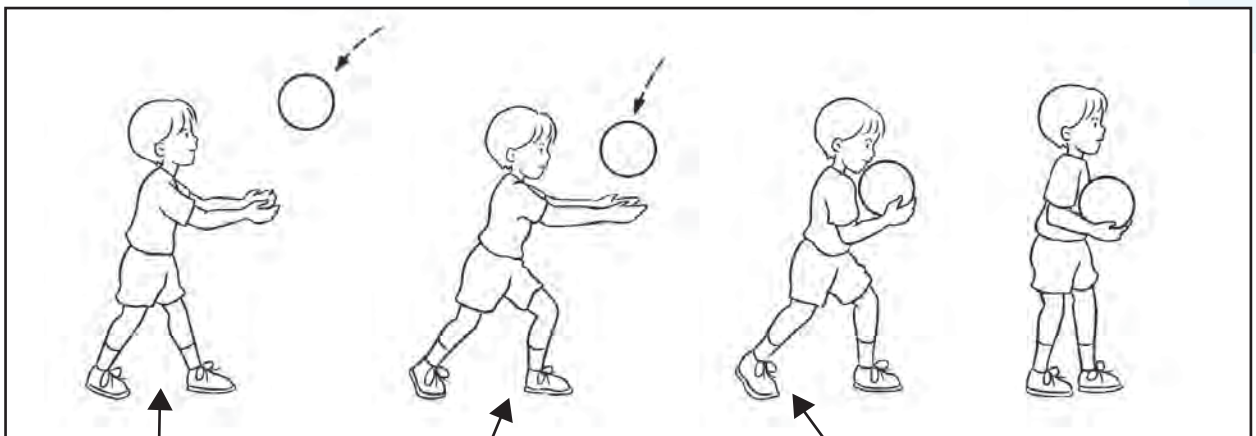
Look at the target and maintain eye contact

Take a step forward with the foot opposite to the throwing hand and bring the object backward

Swing the object forward and transfer body weight to the stepping foot

Follow through by swinging the throwing hand upward

Catching



Look at the object and maintain eye contact

Take a step forward and reach out for the object with extended arms

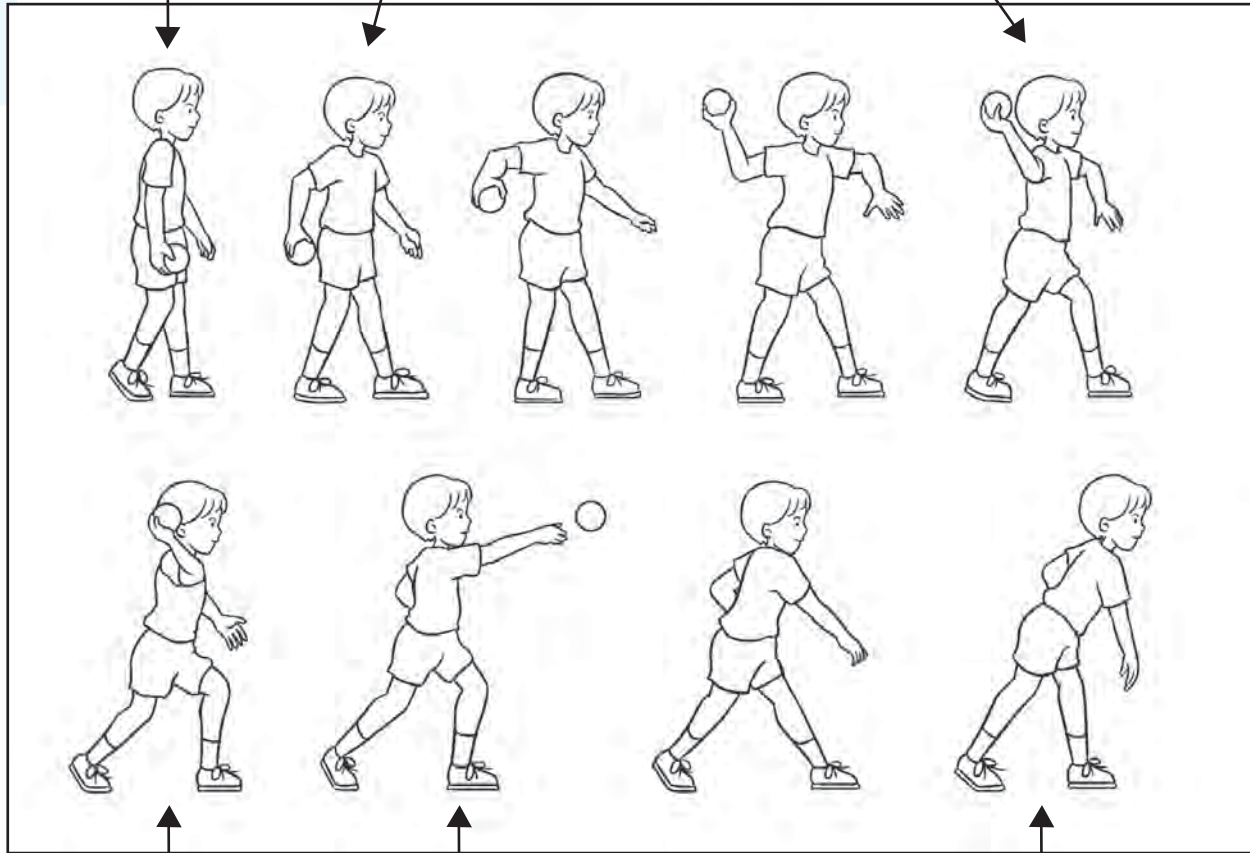
Bring in the object close to the body

Overhead throwing

Look at the target and maintain eye contact

Take a step forward with the foot opposite to the throwing hand and bring the object backward

Bring the object up above and behind the ear and transfer body weight to the stepping foot



Point at the target with the elbow of the throwing hand

Release the object

Follow through by swinging the throwing hand forward



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