

FUNDAMENTAL MOTOR SKILLS

A Manual for Classroom Teachers



Fundamental Motor Skills

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FOREWORD

The role of physical education in the school curriculum is to help students develop the competencies and beliefs necessary for incorporating regular physical activity into their lives. Through involvement in a well-taught physical education program, students can achieve physical and personal benefits.

An important part of a comprehensive physical education program is instruction in fundamental motor skills. Fundamental motor skills, such as the run, leap, catch and overhand throw, form the building blocks which underpin the learning of more complicated sport and movement skills common to the community. Without fundamental motor skill competence, students are less likely to learn related sport and movement skills.

Fundamental motor skill competence has been shown to influence students in many ways. Students who have achieved fundamental motor skill competence have been found to successfully participate in a range of sports and movement activities and maintain involvement during childhood and adolescence. Regular involvement in sport and movement activities lead to gains in health-related physical fitness. How students feel about themselves can be influenced by their physical skills. Students who have achieved fundamental motor skill competence have been found to perceive themselves as being competent, socially accepted and to have a positive attitude towards physical activity. In essence, fundamental motor skill competence assists in preparing students for a healthy lifestyle.

The research for this manual was commissioned by the Victorian Department of Education in response to the recognised need to assist primary classroom teachers improve the teaching and learning of fundamental motor skills, particularly for students in the formative years of schooling.

This innovative manual has been designed specifically for use by classroom teachers in providing age appropriate skills benchmarks, teaching strategies and checklists.

I would like to take this opportunity to acknowledge Dr Jeff Walkley, Dr Bernie Holland, Rose Treloar and Justen O'Connor from the Department of Human Movement Science, RMIT, for their efforts in researching and writing the manual, and to thank Dr Malcolm Rosier (Survey Design and Analysis Services) for his support.

To the project team, schools, students and parents throughout Victoria I offer my sincere thanks.



Stephen Elder

Parliamentary Secretary to the Minister for Education

SECTION A: TEACHING FUNDAMENTAL MOTOR SKILLS

Physical and Sport Education

The following definition of physical education was accepted by the Senate Enquiry into Physical and Sport Education (1992):

Physical education is an all encompassing term, including fitness, skills, movement, dance, recreation, health, games and sport plus the appropriate values and knowledge of each.

The skills developed through a good physical education program are critical in ensuring that students have success in many of the sport and leisure activities common to the community. This view is affirmed in the report, Sport Education (Victorian Ministry of Education, 1987), where physical education is characterised as the “foundation stone” on which an effective sport education program can be built. It is the responsibility of the Victorian Department of Education to ensure that students in the formative years, particularly in Years P–3, develop basic physical education skills. These

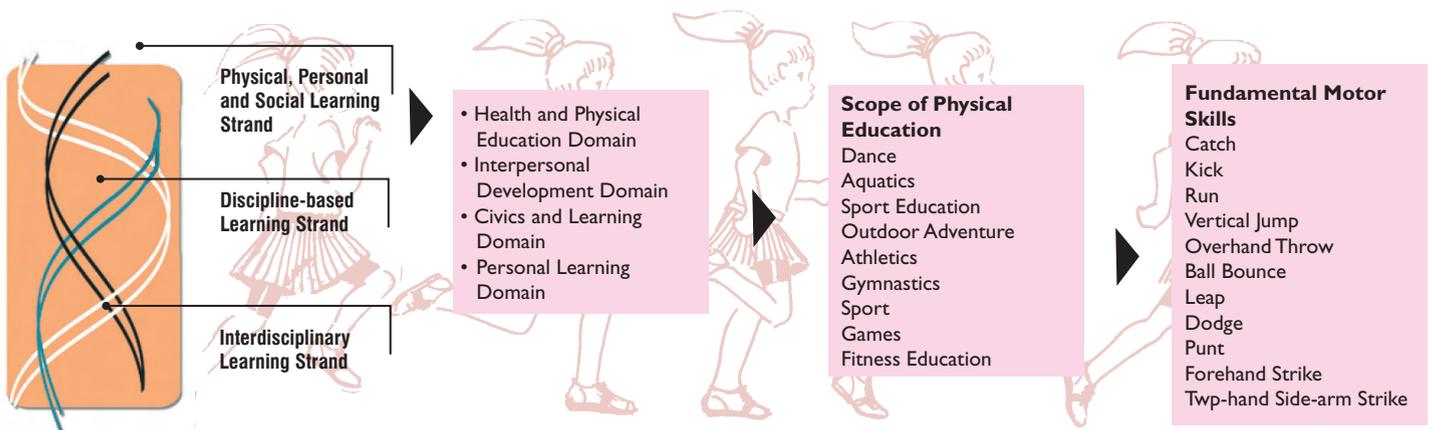
include the development of the essential fundamental motor skills described in this manual.

The Scope of Physical and Sport Education

The role of physical education in the school curriculum is to help students develop the competencies and beliefs necessary for incorporating regular physical activity into their lives. Through involvement in a well-taught physical education program, students can achieve physical and personal benefits.

In the school environment, physical education is viewed as a unifying term for a range of interrelated areas that aim to “physically educate” students (see diagram 1). Students who engage in physical education develop the knowledge, skills, understanding and motivation to seek health and physical competence through lifelong involvement in physical activity. Physical education seeks to promote healthy lifestyles among students.

Diagram 1. Relationship of Fundamental Motor Skills to the Victorian learning Standards (VELS)



Physical education includes sport education. Physical education is the process through which sport, outdoor adventure activities, dance, gymnastics, aquatics and games are used by physical educators to help students learn motor skills and to learn about and achieve physical fitness where this is possible. Physical education activities also assist the school to develop personal and social skills in students.

Fundamental Motor Skills

Fundamental motor skills are common motor activities with specific observable patterns. Most skills used in sports and movement activities are advanced versions of fundamental motor skills. For example, throwing in softball and cricket, the baseball pitch, javelin throw, tennis serve and netball shoulder pass are all advanced forms of the overhand throw. The presence of all or part of the overhand throw can be detected in the patterns used in these sport specific motor skills. Similar relationships can be detected among other fundamental motor skills and specific sport skills and movements (see diagram 2).

Children normally develop motor skills in a sequential manner. Fundamental motor skills comprise one level in the continuum of motor skill acquisition. Children at

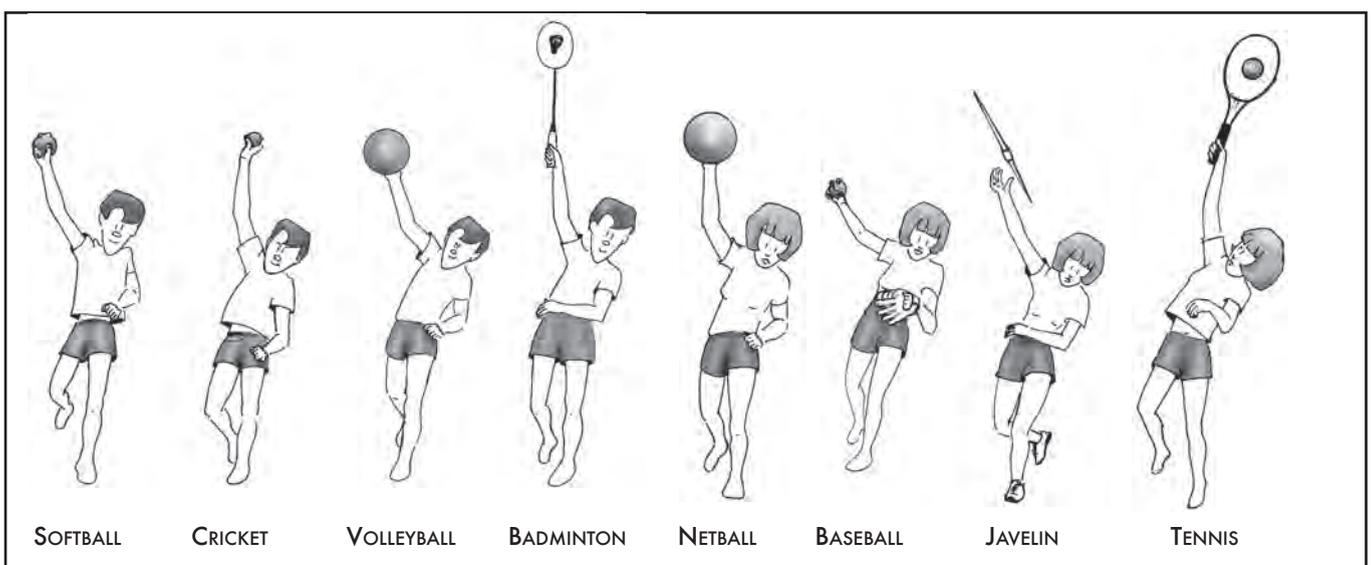
the fundamental motor skill stage are building upon previously learned movements and preparing for the acquisition of more advanced skills.

Sequence of Instruction

The development of motor skills and physical fitness and knowledge must begin in the earliest years of primary school. During these years, students are physically and intellectually capable of benefiting from instruction in physical education and are highly motivated and enthusiastic about learning. However, throughout a student's school life age-appropriate instruction must be provided during physical education.

During the **early primary school years (P-3)**, students must be given the opportunity to learn the essential motor skills upon which later learning is dependent. These fundamental motor skills are often displayed by children at play. They include the overhand throw, catch, punt, kick, forehand strike, two-hand side-arm strike, ball bounce, run, leap, dodge and vertical jump. Suggested times at which these skills should be introduced and mastered by children is included in Table 1 on the next page.

Diagram 2. Relationship between Fundamental Motor Skills and Specific Sports Skill (Overarm Throw)



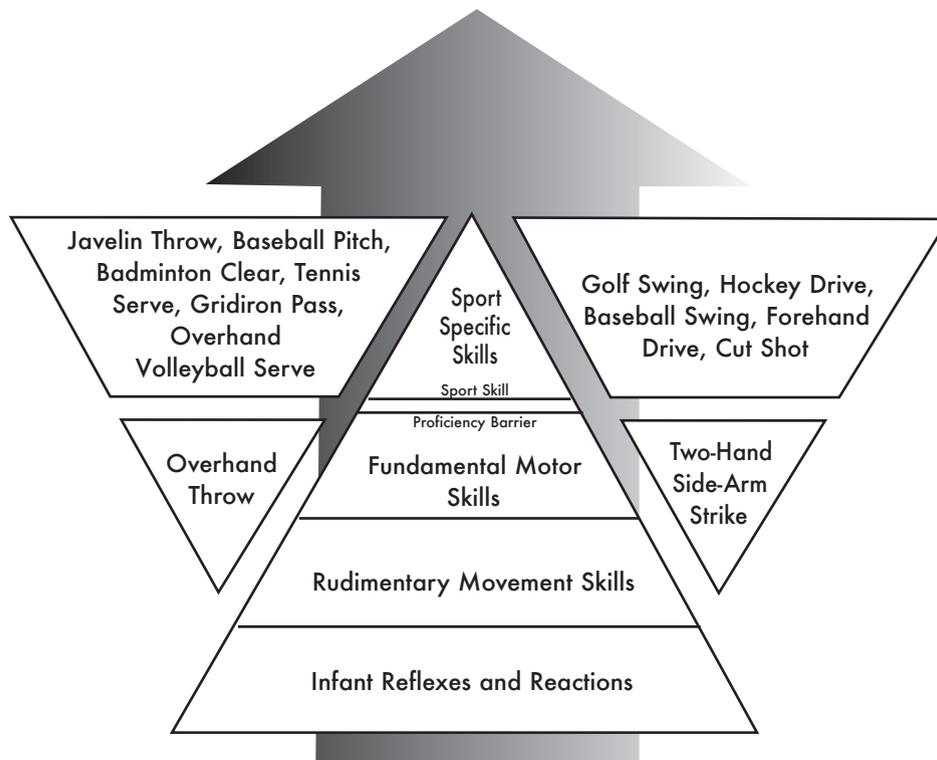
Fundamental Motor Skill	Prep	Year 1	Year 2	Year 3	Year 4	Year 5
Catch	Introduced		Mastered			
Kick	Introduced			Mastered		
Run	Introduced		Mastered			
Vertical Jump	Introduced		Mastered			
Overhand Throw		Introduced			Mastered	
Ball Bounce		Introduced		Mastered		
Leap		Introduced		Mastered		
Dodge		Introduced		Mastered		
Punt			Introduced		Mastered	
Forehand Strike			Introduced			Mastered
Two-hand Side-arm Strike			Introduced			Mastered

Table 1. Suggested Levels for the Introduction and Mastery of Essential Fundamental Motor Skills

Mastery of these skills by children is necessary if optimum development of higher-level skills is to occur. Children who do not master these skills are less able and often less willing to persist with the difficult task of learning more complex motor skills, and will avoid

activities which expose them to “public failure”. Ultimately, such children encounter a sport skill proficiency barrier and reject participation in physical activity as part of their lifestyle (see diagrams 2 and 3).

Diagram 3. Effects of Fundamental Motor Skills Instruction on the Performance of Sport Specific Skills



During the **later primary years (4–6)**, students should be taught a broad range of transitional, or lead-up, motor skills and activities. Examples of skills and activities in this group include: basketball dribble, modified netball, paddle tennis and modified baseball. The skills and activities at this level may be combined or modified in various ways, practised with or without equipment and taught through individual practice or by incorporating them into game structures.

During the secondary years, students should receive physical education that enables and encourages them to further develop their motor skills such as throwing, catching and batting, learned previously, into the more complex and specific sport and leisure activities common to the community.

Fundamental Motor Skills in the Curriculum

Fundamental Motor Skills are referred to throughout the Movement and Physical Activity dimension of the Health and Physical Education Domain, as part of the Victorian Essential Learning Standards (VELS).

(Refer to http://vels.vcaa.vic.edu.au/downloads/vels_standards/velsrevisedhpe.pdf)

This manual is not designed to be a stand alone program. Students need to be able to see physical activity in context. As well as being taught the technical skills needed to participate in a game, students need to be taught how to apply these skills and the movement concepts associated with performing them.

When fundamental motor skills are integrated into physical and sport education programs which emphasise movement exploration, the development of fair play and safety concepts and the enjoyment of regular physical activity, a significant contribution is made to addressing many elements within the Learning Focus Statements and Standards of the Physical, Personal and Social Learning Strands of the VELS.

The challenge for teachers of physical and sport education is to integrate the teaching of fundamental motor skills into movement and sports programs. Existing programs should not be abandoned but reviewed in the light of the contribution that they can make to the development of fundamental motor skills.

Other resources

The awareness of the need to emphasise the development of fundamental motor skills has led to the preparation of a number of other resources developed by the Victorian Department of Education. These are: a *Fundamental Motor Skills Instructional Video*; a set of eleven *Fundamental Motor Skill Posters*; and *Fundamental Motor Skills An Activities Resource for Classroom Teachers*, which includes over 260 activities for the teaching of specific skills. The Australian Sports Commission has developed a skill development manual for use by parents of preschoolers and school children (*Sport Start*), and a manual for teachers to develop sports skills (*Sport It!*).

Critical Fundamental Motor Skills

The following fundamental motor skills have been selected from a wide range of possible motor skills as being those most essential for primary school children to learn:

- Catch
- Kick
- Run
- Vertical Jump
- Overhand Throw
- Ball Bounce
- Leap
- Dodge
- Punt
- Forehand Strike
- Two-hand Side-arm Strike.

Selection involved a detailed process. Stage 1 involved an extensive review of literature to identify the fundamental motor skills reported as most important for children to learn. Stage 2 involved Australia-wide consultation with teachers, coaches, professional groups and experts in the field of fundamental motor skills to assist with the selection of the critical skills and their essential components.

Issues in Teaching Fundamental Motor Skills

Fundamental motor skills are not easy for children to master. A number of critical issues must be attended to by teachers to support this learning

Teaching for Mastery Versus Awareness

The essential fundamental motor skills must be mastered by children. Teachers should aim to teach for the mastery of fundamental motor skills rather than awareness. An attempt at a fundamental motor skill by a student is to be applauded. However, teachers should not accept an attempt at a fundamental motor skill as evidence of mastery of the skill. Students' are expected to achieve mastery of fundamental motor skills.

Know What To Teach

It is essential that teachers understand fundamental motor skills are critical for children to learn during the primary school years. The critical fundamental motor skills for children to learn are the catch, kick, run, vertical jump, overhand throw, ball bounce, leap, dodge, punt, forehand strike, and two-hand side-arm strike. Each of these skills is made up of observable components (often called parts), which when performed together, constitute the whole fundamental motor skill. The components of each of the essential fundamental motor skills are included later on in this document.

By knowing the essential fundamental motor skills and their components, teachers are able to plan instruction, provide specific feedback to students, evaluate student learning, and report student progress in a clear and understandable way.

Feedback is Critical for Learning to Occur

Teachers know that children learn best when they are provided with specific feedback related to their learning efforts. To assist children to learn fundamental motor skills, teachers must provide feedback for children to learn. Feedback is most useful when it is specific and provided soon after a learning activity. Specific feedback occurs when a teacher provides the child with information that identifies how the child performed in comparison to what was expected. In relation to fundamental motor skills, teachers should compare the performance of each child against their knowledge of the components of the fundamental motor skill being taught. Teachers should tell children which components of the fundamental motor skill they have mastered and which components they need to improve.

How Long Does It Take To Master Fundamental Motor Skills?

Fundamental motor skills take a long time to master. Available evidence indicates that it takes between 240 and 600 minutes of instruction to teach children to correctly perform fundamental motor skills. How long it takes to learn different fundamental motor skills depends on the conditions of instruction (i.e. teacher expertise, equipment, class size, age of learner, teaching

methodology, complexity of the skill being taught, etc.). Many people underestimate the amount of time it takes to master fundamental motor skills and try to teach too much too quickly. When this underestimation occurs, teachers end up teaching for awareness or participation rather than teaching for mastery.

An example illustrates this point. The regular school year in Australia is 40 weeks long. On average, children receive two 30-minute lessons of physical education each week. When multiplied out, this allows for 2,400 minutes of instruction each year. Some time is lost each year to camps, pupil-free days, celebrations, teacher sickness and the like, say 10 per cent of available time, leaving 2,160 minutes for physical education instruction in the year. Dividing the available instruction time of 2,160 minutes by the average amount of time it takes for children to learn fundamental motor skills (say 450 minutes), would indicate that only about five fundamental motor skills could be learned by children in a year. This information often startles teachers. But, if the intention of teaching physical education is for children to learn, only a small number of fundamental motor skills can be mastered in a year.

Do Children Learn Best by Playing Motor Skill Games?

While attempting to achieve high student participation rates through organised games, teachers must be vigilant to be sure that the focus of the games is on specific skill development. There is irrefutable research evidence that “teaching” physical education by playing games is a very inefficient way to help children learn. If a game is used as an instructional method, the teacher needs to show children the skills that are to be practised. Rarely are children able to learn what is planned to be learned unless they are directed to the intention of the instruction by a teacher. If games are used to teach fundamental motor skills, it is imperative that the teacher instruct children on how to perform the components of those skills.

Physical Education Teaching Suggestions

The following tips may be useful in teaching fundamental motor skills. Don't be put off by the length of the list! Select one or two strategies and practise them in a lesson. In following lessons, attempt another strategy. After a while, many strategies become a habit.

1. Above all, **teach!** Help children to learn a fundamental motor skill rather than just participate in the activity involving it. Do not passively stand by and observe. Circulate among students when teaching.
2. Use demonstrations to help communicate the key components of a fundamental motor skill to be learned. Demonstrations can be improved by using words or phrases that highlight the important part on which the demonstration is focusing. Ask the student to demonstrate the skill to ensure the instructions have been understood before commencing practise.
3. Keep the time to an absolute minimum between giving an instruction and allowing a student to practise. If possible, have the student begin practice immediately after viewing a demonstration. Avoid giving any new information until the student has had the opportunity to practise.
4. Be patient: teach one component of the skill at a time. Do not provide more than one or two pieces of new information at a time. Use words and phrases that can be easily understood.
5. Provide ample opportunities to practise each fundamental motor skill. Repeated practice will be necessary before a student will master the skill.

6. Ensure that the student achieves success. Plan practice, drills and games so that the student has many successful experiences and minimal negative experiences. Success breeds success: praise in public; remedy in private. Call attention to correct performance rather than to mistakes.
7. Provide appropriate, positive feedback, and praise often. Feedback on student's performance works best when it is specific and given immediately. In addition, ensure that the feedback highlights what is good about the student's performance as well as what can be improved.
8. Link a key word or phrase to a component of a fundamental motor skill while that component of the fundamental motor skill is being demonstrated. For example, link the word "step" to the action of stepping forward during an overhand throw. By hearing or saying the word "step", the student is reminded to step correctly when throwing.
9. Be brief when explaining or introducing a fundamental motor skill or game. Teacher talk should be restricted to less than 60 seconds whenever possible.
10. Keep the purpose of the lesson clear. What fundamental motor skill component will be learned in the lesson? Continually emphasise the focus of the lesson to students.
11. Break down the fundamental motor skill to be learned into small parts. The components of the skill can then be taught in a progressive manner. Teach the first component of the fundamental motor skill, then the second, and then combine the first and second components into a sequence. Continue teaching components and incorporating them into the sequence until the entire skill is being performed.
12. All people make mistakes. Help students to understand that learning most fundamental motor skills is difficult. No one should be ridiculed for their efforts.
13. Accept that children will be active in physical education. Involve children in vigorous activity early in the lesson to use up some of their energy.
14. Teach a signal for attention. Some teachers use a whistle, others a hand clap, still others their voice. Whatever method is used, inform students early of its meaning.
15. Set group sizes that are as small as is practical. Misbehaviour often occurs when students are forced to wait their turn.
16. Remind students of safety considerations associated with a fundamental motor skill or game.

From Walkley, J. & Baldock, R. (Eds.) (1992) *Sport It* (p. 12).

SECTION B: FUNDAMENTAL MOTOR SKILLS BENCHMARKS

The most important components contributing to the successful execution of each of the eleven fundamental motor skills described in this manual, are outlined under the headings below:

Purpose of the Fundamental Motor Skills Assessment

The Fundamental Motor Skills Assessment was developed primarily to provide information to the teacher that will assist in the process of teaching and learning. Teachers can use the Fundamental Motor Skills Assessment to evaluate the performance of their students' skills that have been identified as critical for all children to learn. Within each skill, the teacher will be able to identify the specific component(s) about which the teaching should be organised.

Many teachers associate assessments with grading. While the Fundamental Motor Skills Assessment can be used for this purpose, this is one of the least useful reasons for obtaining information about the status of students' fundamental motor skills. The Fundamental Motor Skills Assessment has more widely accepted usage and these are outlined as follows:

1. Determine Instructional Needs and Class Status

The Fundamental Motor Skills Assessment will aid in determining the status, progress or achievement of students in their motor skill development. This can serve either to assess an individual's level of performance or to determine whether objectives in a teaching program have been achieved. For example, a Year 1 teacher may choose to teach the catch. At the start of the unit, the teacher observes the class during some catching activities. It is observed that most students have difficulty moving their hands to the ball and catching the ball in the hands only. Based upon this observation, the teacher focuses instruction on moving hands to the ball.

After a series of lessons or at the end of the unit, the teacher then reassesses the students on the catch. If appropriate emphasis has been placed on the assessed need (moving hands to the ball), it would be anticipated that improvement will be observed on this component. By observing all students in the class, the teacher would be able to determine the overall level of improvement, those students who are ready to move on, and those students who need more assistance and practice in moving their hands to the ball.

2. Group Placement

The results of the Fundamental Motor Skills Assessment will aid in the placement of individuals in groups according to their motor abilities. Students who need to practise and develop the same component of a skill could be placed in the same group.

3. Screening

One purpose of the Fundamental Motor Skills Assessment is to differentiate between individuals whose skills are developing normally and those whose skills are lacking in development. This is an excellent means of identifying individuals who may have special needs in the development of their motor skills. Based upon these needs, extra emphasis may be placed on skills within the regular physical education class or additional time may be allocated for the purpose of overcoming any deficiencies.

It is important for teachers to note that the Fundamental Motor Skills Assessment can be administered in its entirety, or each skill can be administered individually when it becomes the focus of instruction in the physical education curriculum.

Age and Sequence of Acquisition of Fundamental Motor Skill Components

Table 2 indicates the sequence in which components of the fundamental motor skills appear to be mastered by children. The table also indicates approximate ages at which fundamental motor skills should be learned. Skill mastery will vary according to individual differences, and the quality and quantity of instruction.

The suggested sequence for the introduction and mastery of fundamental motor skills (Table 1) are based upon the premise that children receive appropriate amounts of quality instruction, focussing specifically on the components of each skill.

Fundamental Motor Skills	Age 5			Age 6			Age 7			Age 8			Age 9			
Catch		1			2	3	5	4	6							
Kick	1				2			3	7	6	5	4				
Run		1			2			3			5		4			
Vertical Jump			5		1								4	2	3	
Overhand Throw		1						4	6		2	3		5		
Ball Bounce								5	3	2		1	4			
Leap				1	3		5			2	4					
Dodge		1			5					3	2	4				
Punt		1			3	2		4	8		7	6	5			
Forehand Strike		1						7		2	3	4	6		5	
Two-hand Side-Arm Strike		1			2			8	3	5	4	7			6	

Table 2. Age and Sequence of Acquisition of Fundamental Motor Skill Components

Each column equals a two month period



Administration and Scoring Procedures

Student Preparation

Students need to be made aware that the assessment is a method of determining individual levels and that comparisons will not be made between the results of individual students. Students must understand the importance of doing their best so that the teacher can evaluate their learning and where they need assistance.

Depending on how the assessment is being administered, it may be necessary to provide a 5–10 minute warm-up to prepare the appropriate muscle groups for activity. The warm-up needs to be interesting and enjoyable so that the students participate effectively and are motivated to perform well in the assessment.

Suggested Administration Procedures

Listed below are three alternatives for organising the assessment activity. The critical element is that the activity allows the student the opportunity to demonstrate the skill being assessed.

Free Activity (Play)

Organise a class activity that will encourage participation in the skill being assessed. Arrange equipment and materials so students are able to participate in the skill(s) by choice. As students play, observe their performance on the components of the skill being assessed. Teachers should use their judgment to determine if students' performance meets the criteria when distance or repetitions are specified.

Directed Instruction

Choose a specific activity or game that will require students to demonstrate the skill being assessed.

Arrange materials and equipment as needed, and organise the class for the activity. Observe the students skill as they perform the activity.

Structured Assessment

Engage all students in some type of activity. In another area of the physical education space, set up the appropriate organisation and equipment as required. It is often useful to have the class organised into a number of stations and have the assessing activity at one of the stations. As the students rotate past the station, assess each one on the skill on which they are being observed.

Suggested Ideas For Assessment

1. A friendly enthusiastic approach to students will often act as a strong motivating force.
2. Examine the components of the skill and the layout of the score sheet so that you understand what is being assessed.
3. Avoid long waiting periods between activities for each student. Keep the group being assessed small (6–8 students).
4. The performance of girls has been shown to be negatively influenced by peer pressure from boys. Where possible, separate boys and girls into different groups.
5. Minimise distractions. When giving instructions, face students away from the sun or any other distractions which may make it difficult for them to concentrate.

6. Where possible, combine a demonstration with a brief explanation.
7. Keep instructions and demonstration brief, clear and appropriate to the capacities of the students.
8. Ask students to wait until you have completed a demonstration or explanation before asking questions. This may avoid a student asking an unnecessary question.
9. Be sure everyone can see the demonstration.
10. Avoid giving feedback to the student until you have finished your observation of performance.

Safety Considerations

Safety is the most important consideration when planning and implementing a physical education lesson. The teacher is responsible for providing both a physically and psychologically safe learning environment.

Students can only be made accountable for the rules that they understand. Safety rules need to be taught, reviewed and continually reinforced until they are learnt.

Physical education and sport are mediums where an individual's success and failure can be seen by all. A learning environment should encourage participation, enjoyment and personal achievement. Surroundings that are threatening, intimidating or embarrassing assure a fear of failure.

Even though the fundamental motor skills assessment has been administered to thousands of Australian children and has proven to be safe, it is vital that, prior

to administering the assessment, a teacher checks the safety of the facilities and equipment to be used, as well as the physical readiness of all participating students.

Scoring

On the score sheet provided record a "1" for each component successfully demonstrated and leave blank the space for each component not demonstrated. This scoring procedure applies to each skill. As the student's skill level improves, record a "1" for components demonstrated at a later date. You may want to use different coloured pens for different testing dates or develop your own marking code so that you can observe student change over time as a result of instruction.

Interpretation of Results

After a student or group of students have been assessed on the skill that the teacher has decided to make a focus for instruction, it is simply a matter of scanning the score sheet to identify the component(s) on which to begin instruction. Contingent upon factors such as class size, availability of equipment and the ability of students to work in groups, the teacher will need to select activities that will allow students to learn components not developed, or to refine and improve components already demonstrated. In many instances it will be possible to run the same activity but, based upon the knowledge of each student's strengths and weaknesses, provide different feedback to various students. For example during a catching activity, one student could be provided with feedback about moving their hands to the ball, while another could be given feedback about absorbing the force of the catch. See the information under "Standards" when interpreting results.

Standards

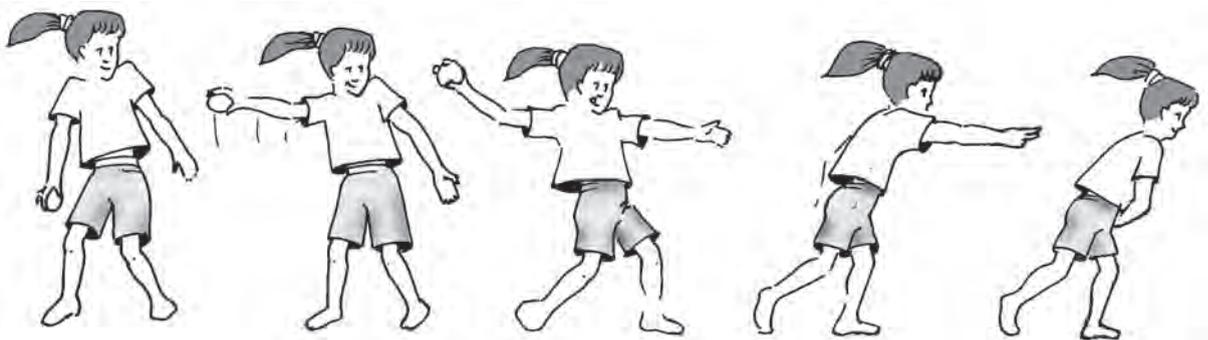
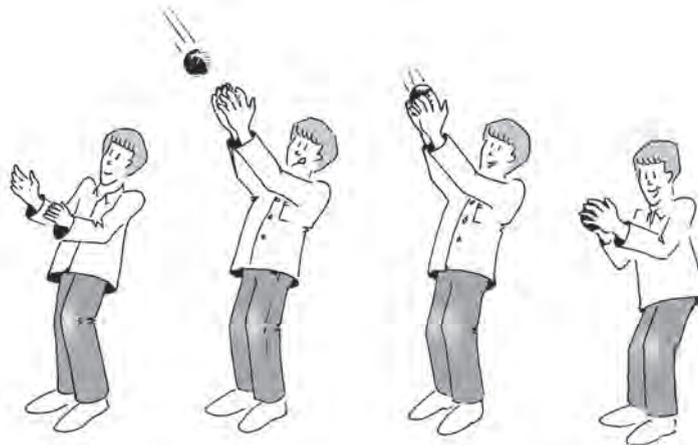
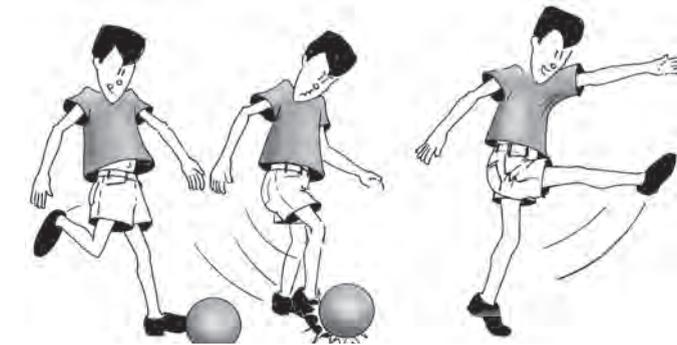
Standards have been established for each fundamental motor skill. These are listed in the Administration and Scoring Procedures section. An example for the catch is provided below. A standard is a recommended age by which time a child could be expected to master a component of a fundamental motor skill. When all of the components of a fundamental motor skill have been learned, the child is said to have mastered the skill.

The fundamental motor skill standards should be used as a guide when planning instruction and when interpreting the results of assessment. For each fundamental motor skill, the standards for each component are listed relative to their level of difficulty, and the sequence in which children normally acquire the component is indicated, as is the length of time between acquisition of each component.

Table 3. Example of Standards Table for Catch

Fundamental Motor Skills	Age 5			Age 6			Age 7			Age 8			Age 9			
Catch		1			2	3		5	4	6						

Fundamental Motor Skills Assessment Procedures and Score Sheets



CATCH

Purpose

To assess the student's catch.

Student Objective

To catch a tennis ball thrown underarm 2–3 metres high from a distance of:
5 metres (5–7 years), 10 metres (8–10 years) or 15 metres (11–12 years).

Preparation

Facility: ▼ Measure a 2 metre square denoted by marker cones placed at each corner. Place a mark on the back line to mark the starting position.

Equipment: ▼ Place at least 6 tennis balls in a bucket near the position from where the ball will be tossed.
▼ Have clipboard, recording sheet and pencil ready for assessment.

or

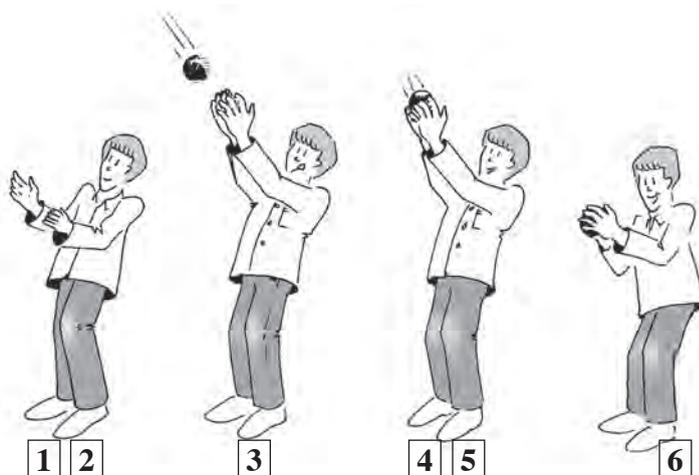
▼ Place a video camera side-on to the student. The field of vision of the video camera should fully include the 2 metre square.

Procedures

- Demonstrate the test requirements of the catch.
- Ask 1 or 2 students to stand behind the catching square to collect any missed balls.
- Ask the student to stand in the middle of the square, catch the tossed ball and place it on the ground beside him/her. Instruct the student to leave any missed catches.
- Allow the student to pause between each catch.

Performance Criteria

1. Eyes are focused on the ball throughout the catch
2. Preparatory position with elbows bent and hands in front of body
3. Hands move to meet the ball
4. Hands and fingers positioned correctly to catch the ball
5. Catch and control the ball with hands only
6. Elbows bend to absorb force of the ball



Standards

The table indicates the age at which each component of the catch could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 4:

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Catch	1	2 3	5 4 6		

KICK

Purpose

To assess the student's kick.

Student Objective

To kick a stationary ball towards a target 10–20 metres away.

Preparation

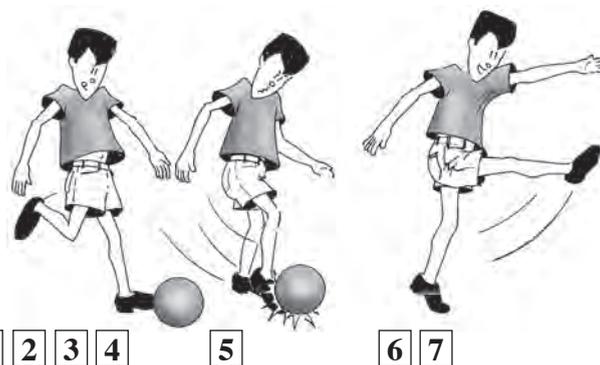
- Facility:
- ▼ Place a mark (cross) on a flat non-slip surface for placement of a ball to be kicked.
 - ▼ Draw a line 3 metres back from the mark as a starting point for a student.
 - ▼ Make sure the area allows for easy return of the kicked balls for the next student (i.e. don't kick towards a fenced area which divides an adjoining road).
- Equipment:
- ▼ Place the balls in a container (i.e. a large crate) near the mark.
 - ▼ Have clipboard, recording sheet and pencil ready for assessment.
- or**
- ▼ Place a video camera side-on so that the leg being used to kick the ball is visible.
 - ▼ The field of vision of the video camera must allow for a full view of the kicking.

Procedures

- Demonstrate the requirements of the kick.
- Organise 1 or 2 students to stand 10–20 metres in front of the kicker so as to retrieve any balls kicked towards them.
- Place a ball on the spot marked (a bean bag may be used to prevent a ball rolling away).
- Ask the student to kick the ball hard and return to the starting line after each kick.
- Allow a pause between each kick.

Performance Criteria

1. Eyes are focused on the ball throughout the kick
2. Step forward with non-kicking foot placed near the ball
3. Bend knee of kicking leg during the backswing for the kick
4. Hip extension and knee flexion of at least 90° during preliminary kicking movement
5. Contact the ball with the top of the foot
6. Forward and sideward swing of arm opposite kicking leg
7. Kicking leg follows through towards the target after ball contact



Standards

The table indicates the age at which each component of the kick could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 5

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Kick	1	2	3 7	6 5 4	

RUN

Purpose

To assess the student's run.

Student Objective

To run as fast as possible along a straight line.

Preparation

Facility: ▼ Measure a 25–30 metre flat straight line, e.g. basketball court sideline, denote each end with marker cones. Allow for safety margins at each end.

Equipment: ▼ Have clipboard, recording sheet and pencil ready for the assessment.

or

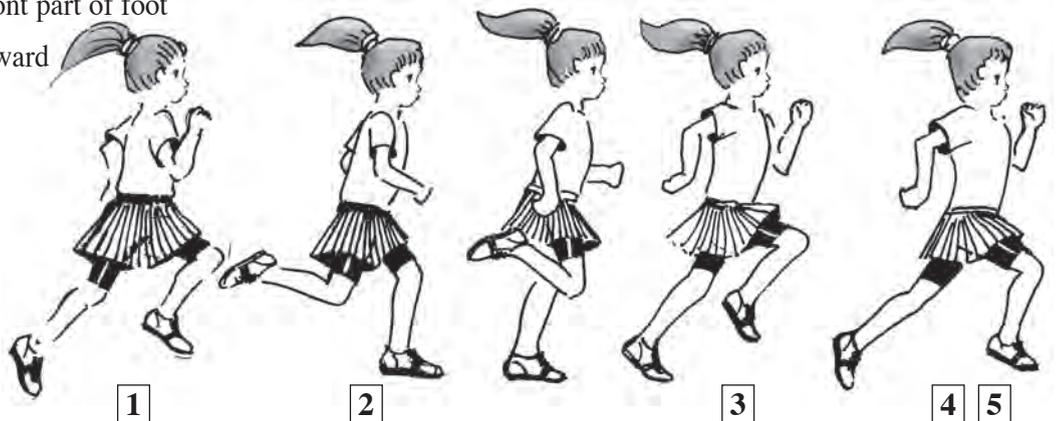
▼ Place a video camera side-on, either side, and far enough away so that the operator will be able to move the camera as student runs from one end of the line to the other.

Procedures

- Demonstrate the requirements of the run.
- Ask each student in turn to run as fast as they can from one cone until they have gone past the other cone, turn and run back to the start.
- Repeat the run once more.

Performance Criteria

1. Eyes focused forward throughout the run
2. Knees bend at right angles during the recovery phase
3. Arms bend at elbows and move in opposition to legs
4. Contact ground with front part of foot
5. Body leans slightly forward



Standards

The table indicates the age at which each component of the run could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 6

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Run	1	2	3	5	4

VERTICAL JUMP

Purpose

To assess the student's vertical jump.

Student Objective

To jump vertically as high as possible from a standing position.

Requirements

Facility: ▼ Mark a cross on a flat non-slip surface.

Equipment: ▼ Have clipboard, recording sheet and pencil ready for the assessment.

or

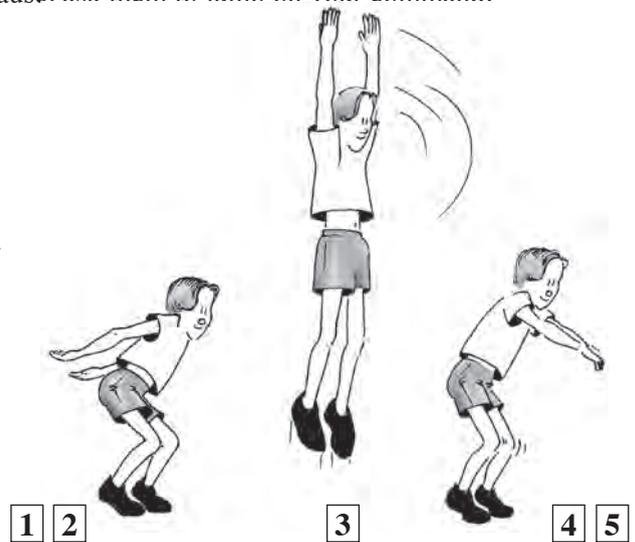
▼ Place a video camera side-on so that the side of the student is visible throughout the vertical jump.

Procedures

- Demonstrate the requirements of the vertical jump.
- Ask the student to jump as high as he/she can.
- Ensure there is a pause between each jump; if they do not pause, ask them to jump on your command.

Performance Criteria

1. Eyes focused forwards or upwards throughout the jump
2. Crouch with knees bent and arms behind body
3. Forceful upward thrust of arms as legs straighten to take off
4. Contact ground with front part of feet and bend knees to absorb force of landing
5. Balanced landing with no more than one step in any direction



Standards

The table indicates the age at which each component of the vertical jump could be expected to be mastered. The table also indicates the sequence in which the components normally appear in children's development.

Table 7

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Vertical Jump	5	1			4 2 3

OVERHAND THROW

Purpose

To assess the student's overhand throw.

Student Objective

To throw a beanbag towards a target 10–20 metres away.

Preparation

Facility: ▼ Marked 2 metre square denoted by marker cones placed at each corner. Place a mark on the back line to mark the starting position. Place a target (i.e. cone) 10–20 metres away.

Equipment: ▼ Place at least 6 beanbags next to the starting position.
▼ Have clipboard, recording sheet and pencil ready for the assessment.

or

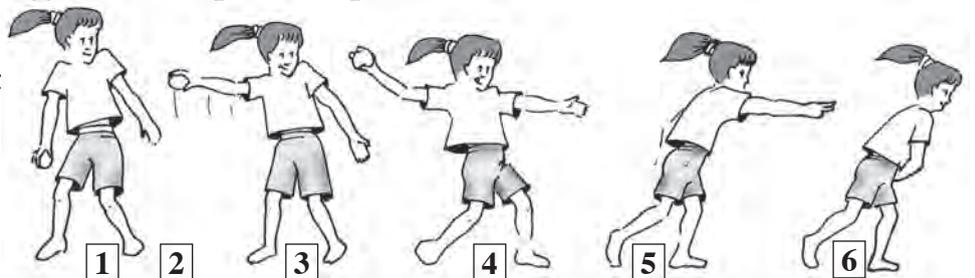
▼ Place a video camera side-on so that the front of the student is visible to the video camera when a side-on position is assumed.

Procedures

- Demonstrate the requirements of the overhand throw.
- Ask the student to throw the beanbag overhand, hard towards the target.
- Ask the student to pause between each throw.
- At the end of the throws, the student should collect the beanbags and return them to the starting line.

Performance Criteria

1. Eyes are focused on the target throughout the throw
2. Stand side-on to the target
3. Throwing arm nearly straightened behind the body
4. Step towards the target with foot opposite throwing arm during the throw
5. Marked sequential hip to shoulder rotation during the throw
6. Throwing arm follows through down and across the body



Standards

The table indicates the age at which each component of the overhand throw could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development

Table 8

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Overhand Throw	1		4 6	2 3	5

BALL BOUNCE

Purpose

To assess the student's ability to bounce a ball continuously.

Student Objective

To bounce a regulation basketball (or 20 centimetre playground ball) at least 5 consecutive times when in a stationary position.

Preparation

Facilities: ▼ Place a mark on a flat hard surface.

Equipment: ▼ Place a basketball next to the mark.

▼ Have clipboard, recording sheet and pencil ready for the assessment.

or

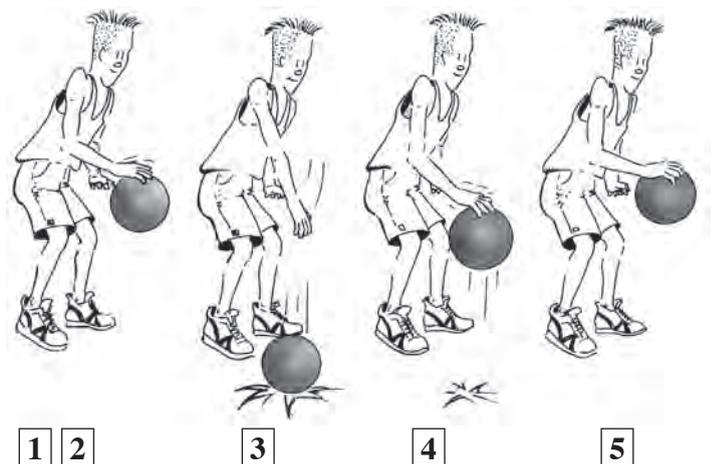
▼ Place a video camera side-on so that the arm being used to bounce the ball is visible.

Procedures

- Demonstrate the requirements of the ball bounce.
- Ask the student to stand on the mark, side-on to the video camera/teacher, and start bouncing the ball on the command "go" and to keep bouncing until given the command "stop".

Performance Criteria

1. Eyes focused forward throughout the bounce
2. Contact the ball with the fingers of one hand at about hip height
3. Wrist and elbows bend then straighten to push the ball
4. Hips and knees slightly flexed during the bounce
5. Ball bounces in front of and to the side of the body



Standards

The table indicates the age at which each component of the ball bounce could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 9

Purpose

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Ball Bounce			5 3 2	1 4	

LEAP

Purpose

To assess the student's leap.

Student Objective

To leap as far as possible.

Preparation

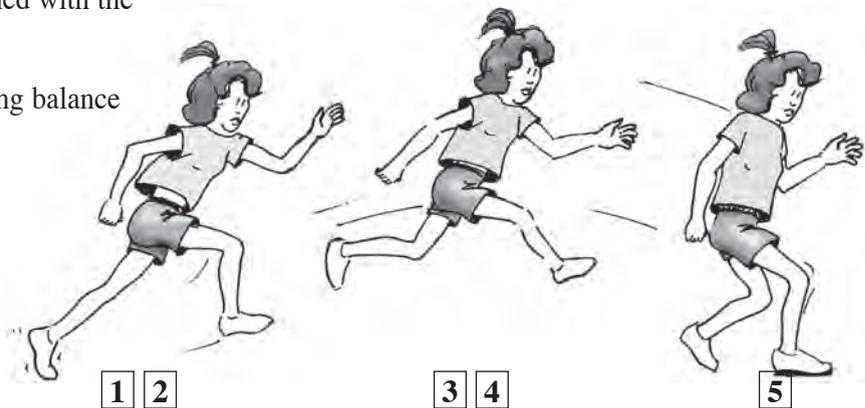
Facility: ▼ On a flat, non-slip surface, mark a 1 metre take-off square using marker cones to denote each corner. Place a mark 3 metres back from the take-off square to mark the starting point.

Procedures

- Ask the student to begin at the starting point and to approach the take-off box and leap from within the square as far as they can.
- Ask the student to repeat the leap.

Performance Criteria

1. Forward movement sustained throughout the leap
2. Eyes focused forward throughout the leap
3. Take off from one foot and land on the opposite foot
4. During flight legs are straightened with the arms held in opposition to legs
5. Controlled landing without losing balance



Standards

The table indicates the age at which each component of the leap could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development

Table 10

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Leap		1 3	5	2 4	

DODGE

Purpose

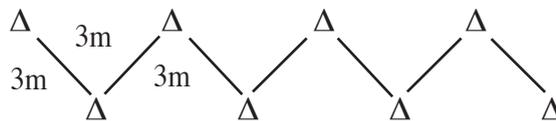
To assess the student's dodging skill.

Student Objective

To move quickly through a series of cones each placed 3 metres apart in a zigzag formation.

Preparation

Facility: ▼ Place cones on a flat, non-slip surface and mark lines as indicated:



Equipment: ▼ Have clipboard, recording sheet and pencil ready for the assessment.

or

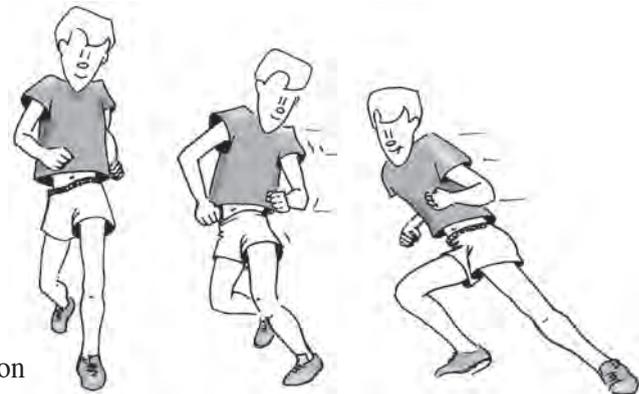
▼ Place a video camera front-on so as to view the student as he/she zigzags towards the camera. Operator may need to zoom out as participant nears completion of dodge task.

Procedures

- Ask the student to run following the lines and at each of the cones to dodge as fast as possible.
- To help understanding, it may be necessary, particularly with the younger students, to allow students to walk through the zigzag course prior to running.
- After running through once, ask the students to walk back to the start and complete the task twice more.

Performance Criteria

1. Eyes focused in direction of travel throughout the dodge
2. Change direction by pushing off outside foot
3. Body lowered during change of direction
4. Change of direction occurs in one step
5. Dodge repeated from right to left, left to right, and so on



1

2

3

4

Standards

The table indicates the age at which each component of the dodge could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 11

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Dodge	1	5		3 2 4	

PUNT

Purpose

To assess the student's punt.

Student Objective

To punt a 20 centimetre playground ball towards a target 10–20 metres away.

Preparation

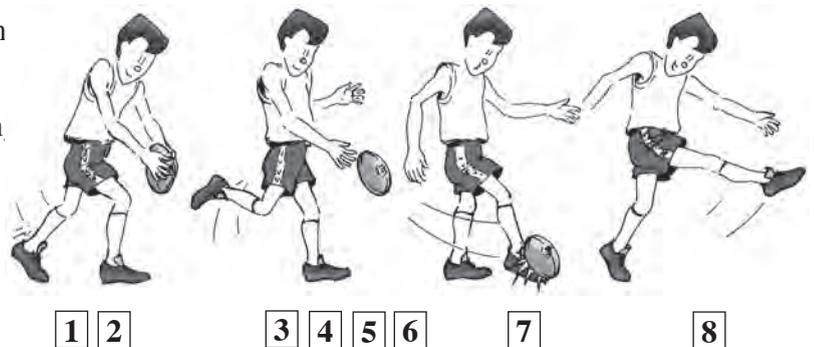
- Facility:
- ▼ The space available must not limit the force of the punt.
 - ▼ Mark a 2 metre square denoted by marker cones placed at each corner. Place a mark on the back line to mark the starting position. Place a target (i.e. cone) 10–20 metres away
- Equipment:
- ▼ Place balls in a container behind the starting position.
 - ▼ Have clipboard, recording sheet and pencil ready for the assessment.
- or**
- ▼ Place a video camera side-on so that the leg being used to punt the ball is visible.
 - ▼ The field of vision of the video camera must allow for full view of the punt.

Procedures

- Demonstrate the requirements of the punt.
- Ask 1 or 2 students to stand 10–20 metres away to collect the kicked balls.
- Ask the student to collect a ball from the container and punt it forwards.
- Ask the student to pause between each punt.

Performance Criteria

1. Eyes are focused on the ball throughout the punt
2. Ball held at about hip height in front of punting
3. Step forward onto non-punting foot
4. Bend knee of kicking leg during the backswing for the punt
5. Hip extension and knee flexion of at least 90° during preliminary punting movement
6. Guide ball down, with one hand, so it makes contact with the top of the foot
7. Forward and sideward swing of arm opposite punting leg
8. Punting leg follows through towards the target after ball contact



Standards

The table indicates the age at which each component of the punt could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 12

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Punt	1	3 2	4 8	7 6 5	

FOREHAND STRIKE

Purpose

To assess the student's one-handed forehand strike.

Student Objective

To strike, using one hand, a tennis ball thrown to bounce to waist height from 5–10 metres away, with a short-handled racquet (i.e. racquet ball racquet, paddle tennis-bat) in a forward direction.

Preparation

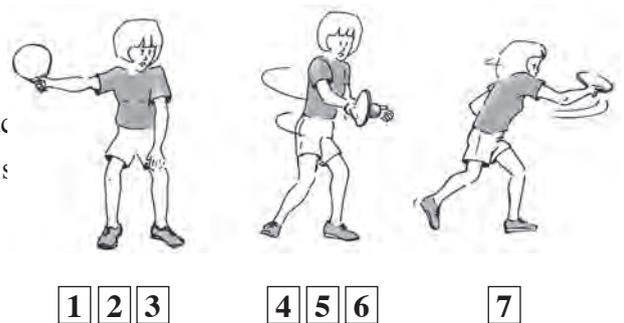
- Facility:
- ▼ Measure a 2 metre square denoted by marker cones placed at each corner. Place a mark on the back line to mark the starting position.
 - ▼ Mark a spot 5–10 metres from the centre of the square from which to toss a ball to bounce and be struck.
- Student:
- ▼ Instruct students to begin from the starting point, but that they may move anywhere within the designated square to strike the ball.
- Equipment
- ▼ Place a racquet near the starting position. Place a bucket of at least 6 tennis balls next to the thrower's spot.
 - ▼ Have clipboard, recording sheet and pencil ready for the assessment.
- or**
- ▼ Place a video camera side-on to the intended direction that a ball will be struck by a student.
 - ▼ The field of vision of the video camera should be set so that the square is in full view of the video camera.

Procedures

- Demonstrate the requirements of the forehand strike.
- Organise 1 or 2 students to stand 5–10 metres behind the thrower to collect any tennis balls hit.
- The thrower stands to face the striker 5–10 metres away.
- Ask the student to stand in position and strike the ball so that it travels on the full past the thrower, and then to return to the starting position after each strike.
- Instruct the thrower to allow a pause between each forehand strike.

Performance Criteria

1. Eyes are focused on the ball throughout the strike
2. Stand side-on to the target with bat held in one hand
3. Striking hand nearly straightened behind shoulder at end of backswing
4. Step towards target with foot opposite striking arm during the swing
5. Marked sequential hip to shoulder rotation during the strike
6. Ball contact made opposite front foot with straight arm
7. Follow through towards the target then around body



Standards

The table indicates the age at which each component of the forehand strike could be expected to be mastered. It also indicates the sequence in which the components normally appear in children's development.

Table 13

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Forehand Strike	1		7	2 3 4 6	5

TWO-HAND SIDE-ARM STRIKE

Purpose

To assess the two-hand side-arm strike.

Student Objective

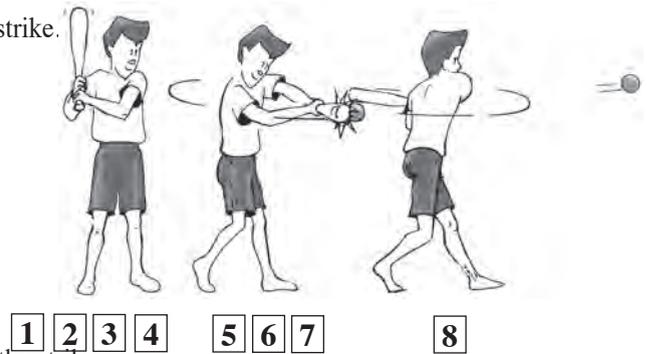
To strike a 8–10 centimetre ball thrown from 5–10 metres away with a lightweight softball/baseball bat in a forward direction.

Preparation

- Facility
- ▼ Measure a 2 metre square denoted by marker cones placed at each corner. Place a cross on the back line to mark the starting position.
 - ▼ Mark a spot 5–10 metres from the centre of the square from which to toss a ball on the full to be struck.
- Student:
- ▼ Instruct students to begin from the starting point, but indicate that they may move anywhere within the designated square to strike the ball.
- Equipment:
- ▼ Place the bat near the starting position and a bucket of at least six 8–10 centimetre balls next to the position from where the balls will be tossed.
 - ▼ Have clipboard, recording sheet and pencil ready for the assessment.
- or**
- ▼ Place a video camera side-on to the intended direction that ball will be struck by a student.
 - ▼ The field of vision of the video camera should be set so that the square is in full view of the video camera.

Procedures

- Demonstrate the requirements of the two-hand side-arm strike.
- Throw the ball towards the student from 5–10 metres away.
Only count those throws that go past the student at a height between the student’s knees and shoulders.
- Ask the student to strike the ball past the person throwing the ball.
- Be sure the student returns to the starting position after each strike.
- Instruct the thrower to allow a pause between each strike.



Performance Criteria

1. Eyes are focused on the ball throughout the strike
2. Preferred hand grips bat above non-preferred hand
3. Stand side-on to the target
4. Bat held behind shoulder prior to the strike
5. Step towards target with foot opposite preferred hand during the strike
6. Marked sequential hip to shoulder rotation during the strike
7. Ball contact made opposite front foot with straight arms
8. Follow through with bat around body

Standards

The table indicates the age at which each component of the two-hand side-arm strike could be expected to be mastered. It also indicates the sequence in which the components normally appear in children’s development.

Table 14

Fundamental Motor Skills	Age 5	Age 6	Age 7	Age 8	Age 9
Two-hand Side-arm Strike	1	2	8 3 5	4 7	6

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APPENDIX A

FUNDAMENTAL MOTOR SKILLS AND THEIR COMPONENTS

Catch

1. Eyes are focused on the ball throughout the catch
2. Preparatory position with elbows bent and hands in front of body
3. Hands move to meet the ball
4. Hands and fingers positioned correctly to catch the ball
5. Catch and control the ball with hands only
6. Elbows bend to absorb force of the ball

Kick

1. Eyes are focused on the ball throughout the kick
2. Step forward with non-kicking foot placed near the ball
3. Bend knee of kicking leg during the backswing for the kick
4. Hip extension and knee flexion of at least 90° during preliminary kicking movement
5. Contact the ball with the top of the foot
6. Forward and sideward swing of arm opposite kicking leg
7. Kicking leg follows through towards the target after ball contact

Run

1. Eyes focused forward throughout the run
2. Knees bend at right angles during the recovery phase
3. Arms bend at elbows and move in opposition to legs
4. Contact ground with front part of foot
5. Body leans slightly forward

Vertical Jump

1. Eyes focused forwards or upwards throughout the jump
2. Crouch with knees bent and arms behind body
3. Forceful upward thrust of arms as legs straighten to take off
4. Contact ground with front part of feet and bend knees to absorb force of landing
5. Balanced landing with no more than one step in any direction

Overhand Throw

1. Eyes are focused on the target throughout the throw
2. Stand side-on to the target
3. Throwing arm nearly straightened behind the body
4. Step towards the target with foot opposite throwing arm during the throw
5. Marked sequential hip to shoulder rotation during the throw
6. Throwing arm follows through down and across the body

Ball Bounce

1. Eyes focused forward throughout the bounce
2. Contact the ball with the fingers of one hand at about hip height
3. Wrist and elbows bend then straighten to push the ball
4. Hips and knees slightly flexed during the bounce
5. Ball bounces in front of and to the side of the body

Leap

1. Forward movement sustained throughout the leap
2. Eyes focused forward throughout the leap
3. Take off from one foot and land on the opposite foot
4. During flight legs are straightened with the arms held in opposition to legs
5. Controlled landing without losing balance

Dodge

1. Eyes focused in direction of travel throughout the dodge
2. Change direction by pushing off outside foot
3. Body lowered during change of direction
4. Change of direction occurs in one step
5. Dodge repeated from right to left, left to right, and so on

Punt

1. Eyes are focused on the ball throughout the punt
2. Ball held at about hip height in front of punting leg
3. Step forward onto non-punting foot
4. Bend knee of kicking leg during the backswing for the punt
5. Hip extension and knee flexion of at least 90° during preliminary punting movement
6. Guide ball down, with one hand, so it makes contact with the top of the foot
7. Forward and sideward swing of arm opposite punting leg

8. Punting leg follows through towards the target after ball contact

Forehand Strike

1. Eyes are focused on the ball throughout the strike
2. Stand side-on to the target with bat held in one hand
3. Striking hand nearly straightened behind shoulder at end of backswing
4. Step towards target with foot opposite striking arm during the strike
5. Marked sequential hip to shoulder rotation during the strike
6. Ball contact made opposite front foot with straight arm
7. Follow through towards the target then around body

Two-hand Side-arm Strike

1. Eyes are focused on the ball throughout the strike
2. Preferred hand grips bat above non-preferred hand
3. Stand side-on to the target
4. Bat held behind shoulder prior to the strike
5. Step toward target with foot opposite preferred hand during the strike
6. Marked sequential hip to shoulder rotation during the strike
7. Ball contact made opposite front foot with straight arms
8. Follow through with bat around body

APPENDIX B

Warm-up Suggestions

The use of a warm-up will help to gain the students' interest in a lesson, motivate them to perform and prepare them physically for the tasks ahead. The activities should be fun and vigorous and aim to engage each child in enough activity to raise a light sweat on the forehead. Preparing the body with a warm-up will reduce the chance of injury and increase the level of performance. The following games and activities are warm-up suggestions that have been used by other teachers.

Catch Everyone

The catcher, wearing a bib or braid, runs about tagging anyone within reach. Any student tagged becomes a chaser for the remainder of the game. The last person to be tagged wins and is the chaser for the next game.

French Tag

One student is designated as the chaser and tries to tag people. Other students run away from the chaser. Those students who are tagged become a chaser and put their hand on the spot on their body where they were tagged while they chase those who have not yet been caught.

Rats and Rabbits

Students work with a partner. Partners sit with their backs to each other approximately a metre apart in two separate lines. One line is called Rats and the other Rabbits. The teacher or a designated student then calls, "Rats" or "Rabbits". The people in the group called stand and run over a line about 5 metres away. The partners chase and attempt to tag them. The game then begins again.

Balance Tag

Two or three people put a hand on their hip for identification as "caught" players. The other players scatter within the area and are "safe" by performing a balance designated by the teacher or a student at the beginning of the game. The "caught" players attempt to tag others before they become "safe".

Freight Train Tag

Groups of four. Three children stand in line with hands placed on the hips of the person in front. The fourth child is the chaser and tries to join the end of the "train". If successful, the first person becomes the chaser.

Here, There and Everywhere

A student is the caller. On “here”, the caller points to the right and the students run in that direction. When the caller says “there” and points to the left, the students run in that direction. On “everywhere”, students run in any direction.

Dodge and Mark

Children form pairs. One child tries to lose his/her partner, who attempts to keep within an arm’s length at all times. Change roles after 20 seconds.

One against Three

Groups of four. Three join hands and form a circle. Designate one of the three as “it”. The fourth player is the chaser. Keeping the circle intact, the three move in different directions with the aim of keeping the chaser away from “it”.

Line Tag

This game is played on a asphalt area with connected lines (e.g. netball/basketball court). Players move along the marked lines (no cutting corners or jumping across to other lines). One or two players begin as the “tagger” (identified by braids). When others are caught they put on a braid and help to tag the remaining participants.

APPENDIX C

Methodology and Assessment Selection

All stages undertaken to develop the Fundamental Motor Skills Manual were in accordance with guidelines determined by the Department of Education. The development of the manual was completed in a number of stages which are outlined below.

Stage 1

The initial stage of the development process involved an extensive review of current and available literature from Australia and overseas in the area of fundamental motor skills. From this literature the fundamental motor skills which were stated as important were recorded and the frequency of this was also tallied. Forty-eight fundamental motor skills were most commonly stated as essential skills for children of primary school age.

Stage 2

A list of consultants in the field of fundamental motor skills was developed. The consultants included practising primary and secondary physical education teachers, professional association and sporting organisation representatives, sports scientists, coaches and university lecturers. The consultants were invited to participate in a consensus forming process to assist in the selection of skills to be included in a test of fundamental motor skills for use with Australian children of primary school age. Fifty-two consultants agreed to participate in the project.

Stage 3

The panel of 52 consultants was asked to review the 48 identified motor skills in terms of:

- their importance in the development of the skill in children of primary school age
- their ranking against each other.

Twelve skills were identified by the consultants as being essential for primary school children to learn. These skills were the:

Catch	Ball Bounce
Overhand Throw	Run
Kick	Leap
Punt	Dodge
Forehand Strike	Vertical Jump
Two-hand Side-arm Strike	Directions in Space

This review process enabled the team to select the most important fundamental motor skills for use in the assessment.

Stage 4

The literature was again reviewed to identify the components of each of the 12 fundamental motor skills. This fundamental motor skill component list was reviewed by the consultants who were asked to identify the critical components for each fundamental motor skill by:

- considering each component listed for each skill
- rating each component's importance to the development of the skill
- commenting on the wording used to describe the component
- adding to the list of components, if necessary
- commenting on the skill statement (statement directing students what to do).

Each response from the consultants was recorded and adjustments made to the fundamental motor skill descriptions. A set of protocols was devised by the research team from this process describing the final 11 fundamental motor skills selected. Directions in space was omitted from the final list due to the difficulty in assessing this skill.

Stage 5

The reliability of each of the individual fundamental motor skill assessment items was established using a group of 42 primary school children over a 7 day test-retest cycle. Subjects included 3 boys and 3 girls from Year Prep to Year 6, who were randomly selected from alphabetised year level lists for the school. Three subjects were not available to complete the retest portion of the reliability cycle.

Reliability estimates (alpha coefficient method) for each fundamental motor skill are listed below.

Catch (.92*)	Ball Bounce (.94*)
Overhand Throw (.92*)	Run (.17)
Kick (.78*)	Leap (.13)
Punt (.86*)	Dodge (.70*)
Forehand Strike (.95*)	Vertical Jump (.74*)
Two-hand Side-arm Strike (.90*)	

(* Significant at $p < .01$)

Stage 6

A statistical consultant was employed to provide a stratified random sample of large and small government, independent and Catholic schools from country and metropolitan regions of Victoria. Approval to conduct the research was sought and received from the Department of Education, the Catholic Education Office and the Royal Melbourne Institute of Technology.

Stage 7

Twenty-six schools were contacted and invited to be involved in the project. Four alternative schools were contacted and invited to become part of the project in the event that schools rejected involvement. Once the required number of schools had accepted an invitation to become involved, they were sent the details of the school's involvement. Each school who agreed to participate in the project was required to elect a school contact person to whom all correspondence could be addressed. A list of responsibilities of the schools' contact person was sent as well as parent consent forms and a parent survey to determine parents' feelings about physical education. The contact person of each school was subsequently contacted by telephone to arrange data collection dates.

Stage 8

The selected fundamental motor skill assessment items were trialled across the 26 primary schools over a period of three months. A team of 12 experienced and qualified physical education teachers administered the surveys. Each member of the team had participated in a training program to ensure consistency in the administration of the protocols. The protocols used during the data collection were determined as a result of the processes undertaken during stage one. Each of the schools were given a copy of the protocols and the administrators of the assessment referred to them during the data collection.

Stage 9

During data collection, the students' performances were videotaped. Three evaluators were trained in the assessment of fundamental motor skills. The evaluators fundamental motor skill assessment accuracy was determined by comparing their performance against a criterion set of video clips that had been scored by two fundamental motor skill experts. Once the evaluators were able to accurately assess each of the 11 fundamental motor skills with an 85 per cent accuracy in comparison to the experts, they were allowed to undertake the reliability (consistency) procedure. Consistency was determined by a test-retest assessment of a videotape of 10 children (5 boys, 5 girls) demonstrating each of the 11 fundamental motor skills. Once the evaluators were able to consistently assess each of the 11 fundamental motor skills with an 85 per cent consistency, they were allowed to commence the assessment of the videotapes collected from the 26 schools.

APPENDIX D

Participants in the Study

Data Collection Team

Thank you to the team that collected the fundamental motor skills data from schools in Victoria:

Christine Barker
Paul Brown
Roger Douglas
Damien Farrow
Dr Bernie Holland
Helen Mursell
Jane Natoli
Despi O'Connor
Justen O'Connor
Brad Rhodes
Jenni Spinks
Rosemary Treloar
Dr Jeff Walkley

Advisors

Sincere appreciation is extended to the following people who served as advisors to the working party:

Dr Peter Tremayne	University of Sydney
Dr Gordon Treble	University of Western Sydney
Rick Baldock	Australian Sports Commission, Canberra
Sue Baker-Finch	Australian Sports Commission, Canberra
James Spink	Aussie Sport Unit
Steven Leitch	Aussie Sport Unit
John Buchanan	Aussie Sport Unit
Peter Wright	Sport and Recreation, Victoria
Kim Nichols	Office of Sport and Recreation, New South Wales
Tricia Robertson	ACHPER (Victoria)
Connie Nelson	ACHPER (National)
Anne Clarke	University of Western Australian
Patricia Denham	University of Canberra
Lindsay Ellis	Academy of Sport, Queensland
Dr Lynn Embrey	Edith Cowan University, Western Australia
Dr Wilf Ewens	University of New South Wales
Imke Fischer	Australian Catholic University
Helmut Geiblinger	Victoria University of Technology
Dr Ken Hawkins	Ballarat University, Victoria

Dr Debbie Hoare	Australian Sports Commission, Canberra
Dr Wayne Maschette	Deakin University, Victoria
Dr Lars McNaughton	University of Tasmania
Dr Tony Morris	Victoria University of Technology
Cameron O Beirne	Surf Lifesaving Association, Western Australia
Dr Carolyn O'Brien	Queensland University of Technology
Dr Helen Parker	University of Western Australia
Michael Poulton	Ballarat University, Victoria
Brad Rhodes	Ballarat University, Victoria
Dr Rob Sands	Deakin University Victoria
Dr Ross Smith	Australian Sports Commission, Canberra
Dr Bill Webb	Westmead Sports Centre, New South Wales
Jeffrey Wollstein	Squash Australia, Queensland
Dr Mark Anshel	University of Wollongong, New South Wales
John Halbert	University of South Australia
Dr Ashley Woodcock	University of Newcastle
Grant Garwood	ACHPER (Tasmania)
Sue Crow	National Australian Football Council, Melbourne
Kevin Madden	National Australian Football Council, Melbourne
Ian Robertson	University of South Australia
Gary Powell	Brunswick Primary School, Victoria
Geoff Pearce	Sports Development, South Australia
Kerry Thompson	University of Newcastle
Neil Barras	RMIT, Victoria
Dr Ken Alexander	Edith Cowan University, Western Australia
Anna Fullarton	ACHPER (Darwin)
Dr Patsy Tremayne	University of Sydney
Dr John Wann	University of Queensland

Participating Schools

Gratitude is directed to the schools who participated in the research that led to the development of the *Fundamental Motor Skills* manual.

Pilot Schools:

Altona West Primary School	Altona
Aspendale Primary School	Aspendale
Birmingham Primary School	Lilydale
Carey Baptist Grammar School	Kew
Caulfield Primary School	Caulfield South
Chiltern Primary School	Chiltern
Echuca South Primary School	Echuca
Findon Primary School	Mill Park
Good Shepherd Lutheran School	Croydon
Harrisfield Primary School	Noble Park
Ivanhoe Grammar School	Ivanhoe
Keilor Downs Primary School	Keilor Downs
Narre Warren Station Primary School	Narre Warren
Nazareth School	Belmont
Northcote Primary School	Northcote
Our Lady's School	Sunshine
Skye Primary School	Skye
St Bernard's School	Wangaratta
St Mary's School	Bairnsdale
St Mary's School	Dandenong
St Mary's School	Kyneton
St Michael and St John's School	Horsham
Stawell Primary School	Stawell
Thomastown West Primary School	Thomastown
Traralgon East Primary School	Traralgon
Vermont Primary School	Vermont
Warrnambool East Primary School	Warrnambool

Notes

Fundamental Motor Skills Resources Order Form

Innovative resources designed for the teaching of fundamental motor skills, particularly for students in their formative years.

Kits **Fundamental Motor Skills Kit @ \$90.00** \$ _____
Includes all the resources listed below, packaged in a durable compact folder.

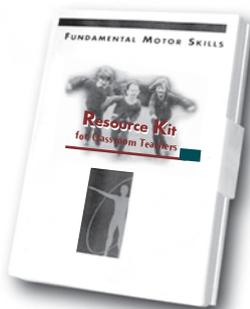
For individual items only, indicate below

Copies **Fundamental Motor Skills Manual @ \$20.00** \$ _____

Copies **Fundamental Motor Skills Activities Resource @ \$30.00** \$ _____

Copies **Fundamental Motor Skills Instructional Video @ \$15.00** \$ _____

Sets **Fundamental Motor Skills Posters @ \$15.00** (11 Posters per set) \$ _____



Handling Fee \$3.00
Cheques made payable to ACHPER Victoria

TOTAL \$AUD _____

Contact Person: _____

Delivery Address: _____

Postcode: _____

Order No.: _____

Fundamental Motor Skills

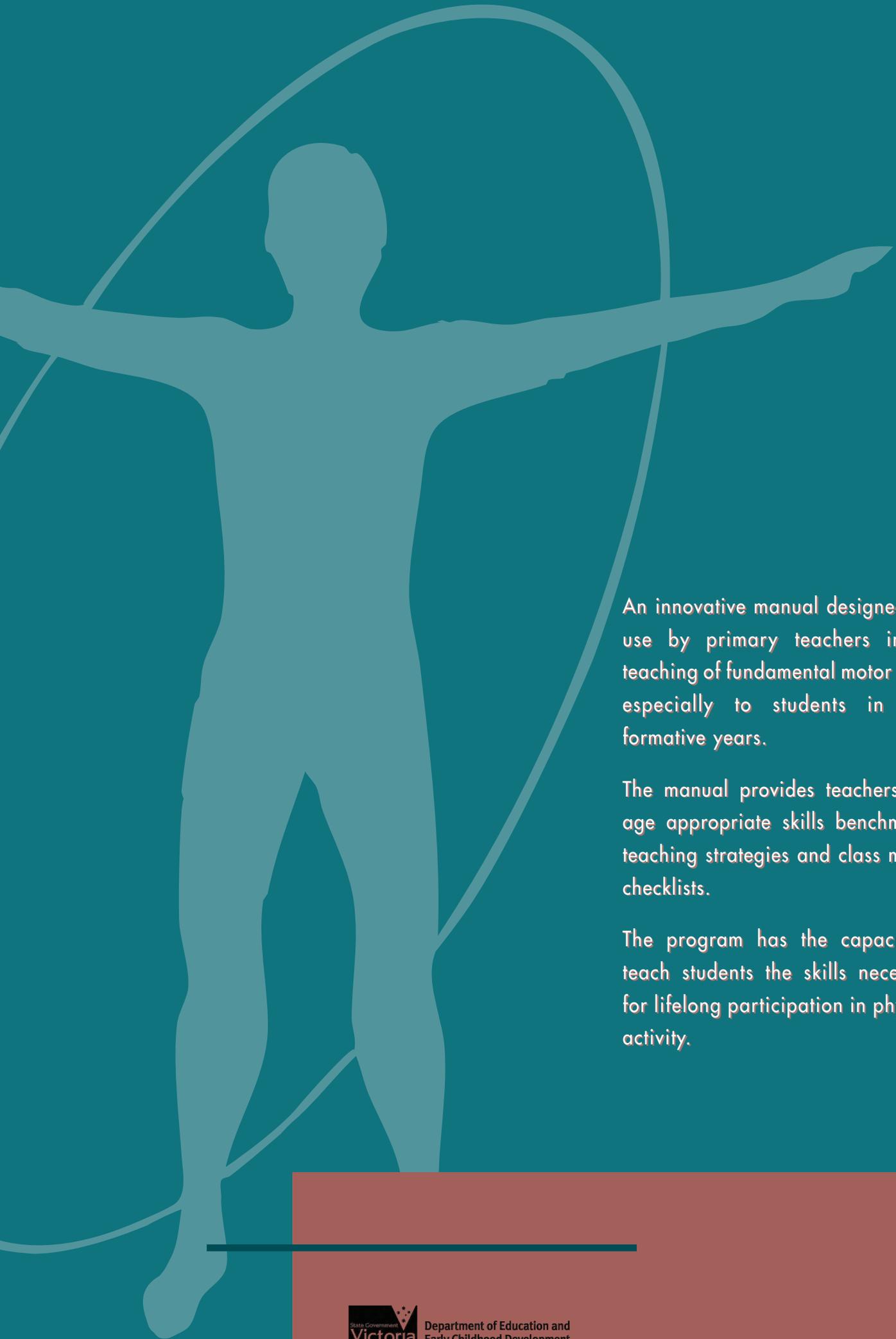
- the overhand throw
- kick
- ball bounce
- dodge
- catch
- forehand strike
- run
- vertical jump
- punt
- two-hand side-arm strike
- leap

- The manual provides teachers with the specific skill components, age appropriate benchmarks and class master checklists.
- The activities resource provides over 250 activities for the teaching of fundamental motor skills.
- The video presents student demonstrations of the 11 skills in slow motion, to use as an aid for practising skill observation.
- The set of 11 posters graphically presents each of the skills in terms of assessment procedures, performance criteria components on each skill and age appropriate benchmarks.

SEND TO : **ACHPER**
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Notes



An innovative manual designed for use by primary teachers in the teaching of fundamental motor skills, especially to students in their formative years.

The manual provides teachers with age appropriate skills benchmarks, teaching strategies and class master checklists.

The program has the capacity to teach students the skills necessary for lifelong participation in physical activity.

