

SECTION 2 - CHILDREN AND THEIR SPORT NEEDS



Coaching Tip: The coach is the central leadership figure in the sporting life of an athlete.

Source: Unknown



This section on Children and Their Sport Needs expands on the information provided in section 2 of your Introduction to Community Coaching Reference Material, and is directed primarily at supporting you in your role as a coach working with children in the FUNdamental stage of development.

2.1 Stages of Long Term Athlete Development (LTAD)

Cross-country skiing is a late specialization sport. During the first three stages of Canada's LTAD model, children grow and improve within the sport through programs permitting a broad exposure to activities that develop overall motor and sport skills. Following the first three stages, there is a transition to either further development and excellence in cross-country skiing or life-long participation in skiing and/or other sports at the recreational or less competitive level. For athletes who wish to pursue excellence, increasing specialization in cross-country skiing and an expanding focus on competition permit them to mature athletically and aspire to national and international podiums. Regardless of the level of excellence or sport-mastery achieved however, participation in cross-country skiing – a “sport for life” - can enhance the health, fitness and mental well-being of Canadians of all ages.

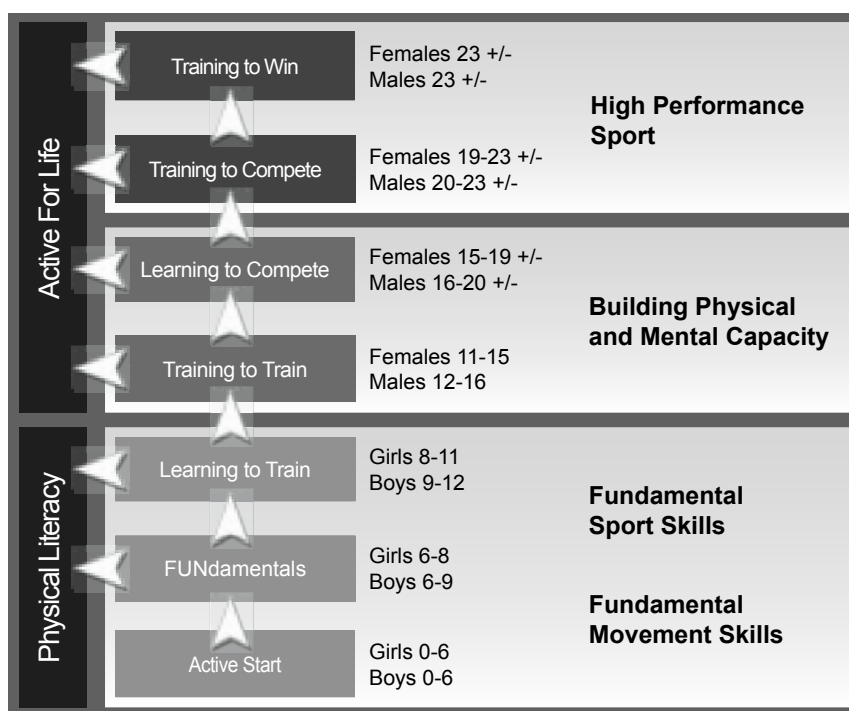
2.1.1 The LTAD Framework for Cross-Country Skiing

The first three stages encourage physical literacy and “Sport for All”:	The next four stages focus on development and competitive excellence:	The final stage encourages life-long physical activity:
1. Active Start 2. FUNdamentals 3. Learning to Train	4. Training to Train 5. Learning to Compete 6. Training to Compete 7. Training to Win	8. Active for Life





Figure 2.1



2.1.2 The LTAD Stages for Cross-Country Skiing

To promote a healthy and logical development for each athlete, the LTAD model identifies sequential stages for training and competition that respect the athlete's physical, mental and emotional development. This approach encourages lifelong physical activity for athletes of all levels of ability and disability. It also provides an effective route for athletes to pursue excellence up to and including the national and international levels of competition.

Following is an overview of the eight LTAD stages:

Active Start (Boys and Girls 0-6)

- ❑ This is an important period for acquiring the fundamental movement skills that lay the foundation for more complex movements, thereby preparing children for a physically active lifestyle.
- ❑ Young children should be physically active through active play, and encouraged to begin cross-country skiing at an early age.

FUNDamentals (Boys 6-9 and Girls 6-8)

- ❑ Fundamental movement skills are mastered, motor development emphasized and basic cross-country ski skills learned. For optimal sport specific acquisition, all basic ski skills, both classic and skating, should be learned before the end of this period.



**Learning to Train** (Boys 9-12 and Girls 8-11)

- ☐ This is an important period for motor development and ***window of optimal trainability for motor-coordination***. Children are developmentally ready to acquire the general sport skills that will be the cornerstone of their athletic development.
- ☐ Fitness becomes increasingly important.

Training to Train (Males 12-16 and Females 11-15)

- ☐ This is an important period for developing aerobic capacity, which is especially critical for cross-country skiing (a lot of skiing at low intensity!).
- ☐ Social and emotional considerations are very important. Team building, group interaction and social events should be emphasized.

Learning to Compete (Males 16-20 (+/-) and Females 15-20 (+/-))

- ☐ Fitness preparation, sport and individual specific skills are developed. The development of self-awareness and independence should be emphasized.
- ☐ Training and racing should be integrated gradually and seamlessly into the overall timetable and lifestyle of the aspiring competitive athlete.

Training to Compete (Males 20-23 (+/-) and Females 19-23 (+/-))

- ☐ This is an important period for individualized fitness preparation. Fitness and medical monitoring is increasingly sophisticated, and sport and individual specific skills are mastered.
- ☐ Self-awareness and independence become increasingly important.
- ☐ Athletes learn to compete internationally.

Training to Win (Males 23 (+/-) and Females 23 (+/-))

- ☐ During this stage athletes focus on high performance and undertake multi-year preparations for major events (i.e. Olympics, World Championships).
- ☐ High performance sport specialist support is optimized, as is fitness and medical monitoring.
- ☐ All aspects of training and performance are highly individualized.
- ☐ Podium performances are the goal.

Active for Life (This stage can be entered at any age)

- ☐ There is a better opportunity to be “Active for Life” if physical literacy is achieved before the “Training to Train” stage.





2.1.3 FUNdamentals Stage of Development

At this stage fundamental movement skills are mastered, motor development emphasized and basic cross-country ski skills learned. For optimal sport specific acquisition, all basic ski skills, both classic and skating, should be learned before the end of this period.

Objectives

- ☐ To develop all fundamental movement skills and build overall motor skills.
- ☐ All basic cross-country ski skills should be learned by the end of this stage.

Optimal Windows of Trainability

- ☐ Speed development.
- ☐ Flexibility development.

The Goals

- ☐ Encouraging FUN and participation.
- ☐ Developing the ABCs of athleticism - agility, balance, coordination and speed.
- ☐ Participation in many activities/sports 4-6 times a week, year-round.
- ☐ Frequent cross-country skiing during the snow season (several times a week).
- ☐ Good technique habits developed through repeated practice; use the Jackraabbit Program "Snow Goals" Awards to encourage time on snow.
- ☐ Continued use of ski playgrounds/terrain parks.
- ☐ Developing basic cross-country ski skills (both classic and skating techniques); equal use of techniques; developing downhill abilities.
- ☐ Utilizing games to develop technique, speed, skills and fitness.
- ☐ Providing programs that are well-structured and monitored. No periodization.
- ☐ Integrated mental, cognitive and emotional development.
- ☐ Introducing basic flexibility exercises.
- ☐ Developing linear, lateral and multi-directional speed with the duration of repetitions less than five seconds.
- ☐ Introducing strength training exercises using the child's own body weight as well as medicine balls and Swiss balls.
- ☐ Developing a team/social atmosphere (increasingly important towards the end of this stage).





- ☐ Focusing on balance, agility and rhythm (on-snow).
- ☐ Introducing competition in a team environment whenever possible
- ☐ Encouraging inter-club social, skill and fitness-oriented ski activities (e.g. camps during the ski season).

Psychological Training

- ☐ Gain an awareness of the importance of mental skills.
- ☐ Exposure to positive thinking skills to build confidence and the ability to cope with stress.

Children who do not develop their fundamental motor skills by 12 years of age are unlikely to reach their genetic athletic potential.

2.1.4 Coaching Tips

- ☐ Continue to make use of settings that allow children to learn to ski naturally (terrain parks/ski playgrounds). However the practices should now be both well-structured and monitored.
- ☐ Link skill development into play and games. Learning skills should be FUN!
- ☐ At this age, children appreciate variety.
- ☐ Design activities that help children to feel competent and comfortable while being challenged.
- ☐ Make good use of the short snow season. Maximize opportunities for on-snow sessions while snow is available.
- ☐ Include activities that encourage a social atmosphere within the group. Arrange for social time following practice sessions.
- ☐ Put a big emphasis on team building.
- ☐ Treat all children in the group equally.
- ☐ Insist that the individuals in your group show respect for each other.
- ☐ Introduce on-snow skill development camps during the latter part of this stage of development.



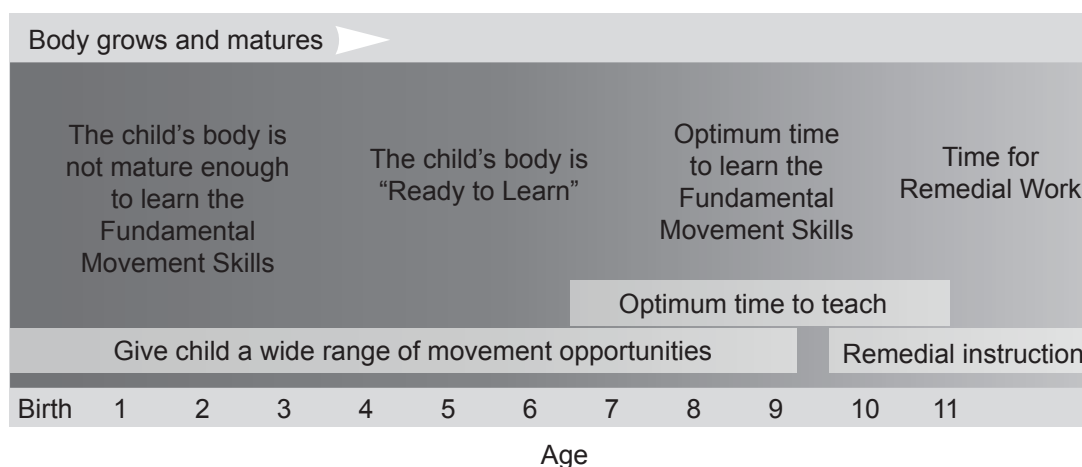


2.2 Physical Literacy

- ❑ FUNDamental movements skills and FUNDamental sports skills = physical literacy.
- ❑ Physical literacy refers to competency in movement and sports skills.
- ❑ Physical literacy gives children the tools they need to take part in physical activity and sport, both for healthy life-long enjoyment and for sporting success.
- ❑ Physical literacy should be developed before the onset of the adolescent growth spurt.

In the Introduction to Community Coaching (ICC) workshop you were introduced to the concept of physical literacy and learned how important it was for children in the Active Start stage of development to learn fundamental movements and link them together into play. Refer to section 2.4 of your ICC Reference Material if you wish to review this information.

Figure 2.2: Learning Fundamental Movement Skills



In this workshop you will learn about physical literacy during the FUNDamental stage of development. At this stage fundamental movement skills should be mastered, motor development emphasized and basic cross-country ski skills learned. For optimal sport specific acquisition, all basic cross-country ski skills, both classic and skating, should be **learned** before the end of this period.

The third stage of development (Learning to Train) will be the most important period of motor development, and a window of accelerated adaptation to motor co-ordination. You will learn more about this stage during the first CCI workshop – the L2T (Dryland) workshop. This is the stage when children are developmentally ready to acquire the general sport skills that are the cornerstones of all athletic development. For optimal sport specific acquisition, all basic cross-country ski skills, both classic and skating, should be **refined** before the end of this period.





For children to have success in sport - either as a health-related recreational activity or a competitive activity - it is important that they master fundamental movement skills before learning fundamental sport skills, and it is important that they learn fundamental sport skills before being introduced to specific techniques.

2.2.1 The Difference Between Fundamental Movement Skills and Fundamental Sport Skills

The difference can be illustrated by the following examples:

- ❑ When children learn to throw a variety of balls of different sizes with one hand or both hands, and to throw the ball at different speeds - sometimes for accuracy using a variety of different targets, and sometimes for distance - they are learning a fundamental movement skill.
- ❑ When children learn to throw a softball using a softball pitching motion, and attempt to pass the ball over home plate, they have moved from learning a “fundamental movement skill” to learning a “fundamental sport skill”.

Some further examples of this are:

❑ Kicking Skills

- ✓ In the “fundamental movement skill” stage, children should learn the basic kicking action with each foot. They should kick a wide variety of balls and try different things – e.g. kicking as far as they can, kicking to hit a target, kicking to keep the ball on the ground, kicking the ball as high in the air as they can.
- ✓ In the “fundamental sport skill” stage (e.g. soccer), children learn to kick a soccer ball without touching the ball with their hands, how hard they have to kick the ball in order to get it to another team member and how to kick the ball with the inside of the foot to increase passing accuracy.

❑ Catching Skills

- ✓ In the “fundamental movement skill” stage, children learn to catch - first with both hands together in a two handed catch, and then with one hand. They will learn to catch a wide variety of balls of different sizes and weights, to catch the ball while they are standing still and when to move towards the ball. These are skills that can later be transferred to any sport they take up.
- ✓ In the “fundamental sport skill” stage (e.g. baseball), children learn to catch a baseball using a baseball glove. As their skill level improves they learn to catch the baseball when it is thrown at them, and then when it is hit with the bat.

For more information on movement skills and sport skills refer to section 4.4 of this Reference Material.





2.2.2 Physical Literacy During the FUNDamentals Stage of Development

Objective: Learn all fundamental movement skills and build overall motor skills.

This is a critical stage for the development of physical literacy, and it is during this time that the foundations of many advanced skills are laid down.

Skill development for children this age is best achieved through a combination of unstructured play in a safe and challenging environment; and quality instruction from knowledgeable teachers/leaders/coaches in community recreation activities, schools, and minor sport programs.

- ☐ Physical Literacy during the FUNDamental Stage of LTAD Skill development during this stage should be well-structured, positive and FUN, and should concentrate on developing the ABCs – of Agility, Balance, Coordination and Speed, plus rhythmic activities.
- ☐ Hand and foot speed can be developed especially well by boys and girls during this stage and if this window of opportunity to develop speed is missed, body speed later in life may be compromised.
- ☐ This is a great age for children to take part in a wide range of sports – and they should be encouraged to take part in land-based, water-based and ice/snow based activities at different times of the year.
- ☐ It is important that all children including those with a disability, master fundamental movement skills before sport specific skills are introduced.
- ☐ Strength, endurance and flexibility need to be developed, but through games and fun activities rather than a training program.
- ☐ Learning to “read” the movements going on around them and make sound decisions during games are critical skills that should be developed at this stage.

Things to think about:

Children this age should not specialize in a single sport. Although they may well have a preferred sport that they take part in once or twice a week, they should take part in other sports or activities at least three to four times per week. Children this age have a strong sense of what is “fair” and should be introduced to the simple rules and ethics of sports. Basic tactics and decision making can be introduced.

Using equipment that is the right size, and that fits well makes learning activities much more enjoyable and also safer. Equipment swaps and rentals are one way to keep the cost of participation down – and this is particularly important for children with a disability who need specialized sports equipment.

Fundamentals – Physical Literacy Activities

- ☐ Encourage children to engage in unstructured physical play with their friends every day, regardless of the weather.





- ☐ Continue to play catching, throwing, hitting, running and other physically demanding games with both boys and girls. If possible, enroll children in programs that offer a wide variety of different activities (multi-sport programs) or in a wide range of different activities. Try as many different activities as possible.
- ☐ Attend parent-teacher, or other school meetings and advocate for quality physical education programs in the school – with sufficient time allocated (recommended allocation 150 minutes per week – 30 minutes per day) taught by a qualified physical educator.
- ☐ Don't be concerned with the score. At this age many programs that include competition don't keep score. This puts the focus of the program on learning and having fun, rather than on doing whatever it takes to win matches, games and leagues.
- ☐ Don't believe the myth that early specialization in sports such as soccer or hockey will lead to far greater performance later in life. Developing all-round athletes at this age is far better, but remember that a few sports (such as gymnastics and figure skating) do require early specialization.

This is a paramount message to coaches and parents: if the fundamental and basic sport-specific skills are not established before ages 11 and 12 respectively, athletes are unlikely to reach their optimal or genetic potential!

Children who are physically educated will:


- ☐ feel confident and be encouraged to continue to build on these skills through recreational and competitive sport activity;
- ☐ enjoy overall health benefits by developing greater physical literacy, which encourages them to be more physically active throughout their lives. Increased activity reverses the current trends in childhood and adult obesity and cardiovascular disease; and
- ☐ discover a pathway to competition that – if pursued – may lead to excellence at the international level.





2.3 Detailed Growth and Development Considerations

6-7 Years, Growth and Development of Participants

General Remarks	
<ul style="list-style-type: none">• At this age the child remains fairly individualistic and self-centred; needs a lot of attention and must be in the company of an adult and/or in a small group• High dependence on parents• Acknowledges the coach as the leader• Needs to have a well-established routine in daily activities• Has no athletic or competitive background• Interest in sport activities may begin to grow	
Psychosocial	
<ul style="list-style-type: none">• Rather individualistic; often tries to expand social circle and the number of friends, especially with individuals of the same sex• Sometimes shy• Is conscious of own feelings and emotions, and of those of others toward him/her; can play on these feelings to obtain privileges• Boys and girls can be involved in the same activities without difficulty	
Learning	
<ul style="list-style-type: none">• Learns best by observing, quickly followed by doing• Short attention span (a few minutes)• Ability to reason is limited to what is readily observable• May be afraid of the unknown• Is likely to imitate and be highly imaginative; is often curious and wants to know everything	
Physical	
<ul style="list-style-type: none">• Development of the nervous system is almost complete• Rate of physical growth is constant, yet relatively slow; on average, little difference is observed between boys and girls with regard to height and weight• Head is still very fragile; bones, tendons, muscles and ligaments cannot sustain heavy loads• Always seems to be moving; coordination is not very well developed; endurance is low	





- Resting heart rate and heart rate during exercise are higher than for adults; resting heart rate is approximately 100 bpm. Aerobic metabolism predominates during effort; low anaerobic capacity
- Sweating mechanism of children is not well developed, which reduces their capacity to dissipate heat during exercise; children are at an increased risk of overheating injuries such as hyperthermia
- Children cool off rapidly, and do not tolerate cold well, which is why it is important for them to dress appropriately for winter activities (refer to sections 3 and 6 for more information)

Preferences

- Enjoys individual activities, with some interaction with the group (e.g. tag); likes to throw, catch, hit, kick, run, jump, climb and other activities where the whole body is involved
- Enjoys all types of activities that require imagination or involve imitating an adult
- Games should encourage creativity and have few rules

To Avoid

- Activities that require repeated impact or wherein there is a risk of collision
- Repetitive activities and activities that feature too much structure (to prevent boredom and also overuse injuries)
- Exercising in a very cold or hot environment
- Using equipment that is not designed for children (i.e. too big, too heavy)
- Specialization in a sport or in a position
- Repetition of all-out efforts lasting between 20 and 60 seconds; work against a high resistance; prolonged aerobic endurance efforts
- Emphasizing the result or performance
- Negative competitive experiences
- Comparisons with other children
- Lengthy explanations
- Negative criticism



Suggestions

- All activities should take the form of games; conditions in which activities or games take place should be varied to promote the development of a variety of motor patterns and skills





- Rules should be adapted to encourage a high degree of interaction between and involvement of participants, and to increase the probability of success during the activity; modified, scaled-down equipment should be used
- Demonstrations should be highly specific, simple and aimed at the achievement of a well-defined objective; duration of activities should be relatively short, and exercises should change frequently
- Children need to be praised and complimented generously and regularly for their efforts; feedback should focus on one point only; choose the most important one; children should be encouraged to be proud of their own performance, and to congratulate others for theirs
- Basic motor abilities should be developed through games; techniques should be introduced in ways that stimulate the child's imagination (e.g. refer to a funny situation of the child's life, a cartoon)
- Encourage children to drink water, and in hot conditions ensure that there are plenty of beverages available


Examples

- Relay or obstacle races
- Somersaults, pirouettes, jumps, runs, lateral movements, rope climbing, rope skipping, use of play structures, sliding, throwing, catching, passing a ball with hands or feet, hitting a ball
- Basic strength exercises using the child's own body weight (push-ups, pull-ups, squats with own body weight)





8-9 Years, Growth and Development of Participants

General Remarks	
<ul style="list-style-type: none"> • Has a high degree of imagination; being active is very important; likes to work, learn and accomplish things • Still needs a well-established routine in daily activities • Wants to act on his/her own; does not like conventions or norms, but will accept the coach's instructions if there is a sense that he/she participates in the establishment of the rules and conditions governing the activity • May have very little or no athletic background • Interest in sport activities is often high 	
Psychosocial	
<ul style="list-style-type: none"> • Is still individualistic and self-centred, but shows an increasing interest in the group; wants to be accepted by others, and usually shows a great deal of loyalty toward the team • Needs praise and positive feedback • Is conscious of own feelings and emotions, and of those of others toward him/her; can play on these feelings to obtain privileges • Boys and girls may be involved in the same activities without difficulty • Seeks the approval of others; may reject opportunities to interact with individuals of the opposite sex 	
Learning	
<ul style="list-style-type: none"> • Accepts following instructions to learn faster, and reacts favourably to positive feedback/praise; ability to concentrate and to pay attention is relatively good; can begin to make some generalizations • The emphasis should be on motor development and the learning of skills in a variety of sports • It is possible to start teaching the rules of the game and fundamental tactical principles • Is capable of assessing the angles of moving objects (e.g. balls), yet may still have some difficulty distinguishing between right and left • Ability to reason and solve problems is limited to what can be observed 	





Physical
<ul style="list-style-type: none"> Physical characteristics are similar to children aged 6-7, but coordination and stamina are better; growth rate is slow, which tends to allow for a greater degree of motor control and autonomy The development of the nervous system is almost complete Reaction time is slow; shows an increased ability to make coordinated and quick movements Large muscle masses (e.g. the legs) show a greater degree of development compared to smaller ones (e.g. arms, hands) Very little potential for increased muscle mass (hypertrophy); strength gains result primarily from increased coordination and neural factors Resting heart rate and heart rate during exercise are higher than for adults; aerobic metabolism predominates during effort and anaerobic capacity is low The sweating mechanism of children is not well developed, which reduces their capacity to dissipate heat during exercise; children are at an increased risk of overheating injuries such as hyperthermia
Preferences
<ul style="list-style-type: none"> Enjoys individual or group games, and drills where participants are paired Likes activities where the whole body is involved (e.g. jumping, running) Likes to assume some responsibility, and to take part in decisions relating to games or activities played Prefers activities that will allow him/her to shine and to be successful
To Avoid
<ul style="list-style-type: none"> Activities that feature repeated impacts or where there is a risk of collision; repetitive activities (for reasons of boredom but also to prevent overuse injuries); activities that are too structured Mechanical and/or highly repetitive approach to the teaching of fundamental techniques; use of equipment that is not designed for children Repetition of all-out efforts lasting between 20 and 60 seconds; work against a high resistance; prolonged aerobic endurance efforts Exposure to a hot or cold environment (unless dressed appropriately for a cold environment) Specialization in a sport or for a position Emphasizing winning and creating a pressure to perform Comparisons with other children





- Negative competitive experiences
- Lengthy explanations
- Negative criticism

Suggestions

- Establish guidelines for acceptable behaviour, and act in a consistent and predictable manner; however, accept each child unconditionally
- Children need to be praised and complimented generously and regularly for their efforts; feedback must focus on one point only; choose the most important one; emphasize the following: development of confidence, self-esteem, peer interaction, cooperation, having fun, putting winning and losing into perspective, and giving a 100% effort
- Demonstrations must be highly specific, simple and aimed at the achievement of a well-defined objective; duration of activities must be relatively short, and exercises must change frequently
- Focus on activities that are aimed at developing coordination, balance and proper motor patterns; encourage participation in a variety of sports and activities; encourage the use of both right and left hands and feet whenever possible to enhance motor patterns and improve coordination; good age to use speed games
- Modified, scaled-down equipment should be used; competitive games where ability levels are matched; create opportunities for the child to demonstrate the progress he/she has made in a way that will enhance self-image; participants should have the opportunity to take some responsibility, and to assess the impact of such decisions; rules should be adapted to encourage a high degree of interaction between and involvement of participants, and to increase the probability of success during the activity
- Encourage children to drink water, and ensure that plenty of beverages are available when exercising in the heat





2.4 CCC Athlete Development Grid

LTAD STAGE	COACH LEVEL	FACILITIES	TECHNIQUE	PHYSIOLOGY	STRENGTH & FLEXIBILITY	MENTAL SKILLS	COMPETITION	OTHER
"FUNDamentals" stage of athlete development. Boys and Girls 6 - 7 (first part of the FUNDamentals stage)	NCCP Community Coach (i.e. completed NCCP Community Coaching (CC) workshop) Minimum 26 hrs. training.	Varied terrain, groomed tracks for skating and classic techniques. Daylodge in stadium area. Continue to make use of ski playgrounds/terrain parks. Lit ski playground.	Master fundamental movement skills, develop overall motor skills. Acquire basic cross-country ski skills (both classic and skating techniques); equal use of techniques; develop downhill abilities. Focus on balance, agility and rhythm. Use "Snow Goals" to encourage time on snow. Good technique habits are developed through repeated practice.	Window of optimal trainability for speed 1 and flexibility development. Develop general fitness through participation in a variety of sports/activities on a regular basis, year round. Utilize games to develop technique, speed, skills and fitness.	Introduce basic flexibility exercises. Introduce strength exercises using the child's own body weight, medicine balls, Swiss balls.	Create awareness of the importance of mental skills. Exposure to positive thinking skills to build confidence and the ability to cope with stress. Integrated mental, cognitive and emotional development.	Ski tournaments, club relays, treasure hunts, year-end activities. 5 - 10 min. (0.5 to 1 km) 4 races/season. Use varied terrain, include some unconventional settings (e.g. obstacle courses, terrain parks). Introduce competition in a team environment whenever possible.	Ensure appropriate ski equipment including waxable skis. Practice sessions: two per/wk, minimum 16 on-snow sessions 60 min. organized activity plus supervised active ski play. Practice sessions should be well-structured and monitored. Time on skis in addition to practice sessions - as many ski playground experiences as possible (several times a week). Basic ski care.





LTAD STAGE	COACH LEVEL	FACILITIES	TECHNIQUE	PHYSIOLOGY	STRENGTH & FLEXIBILITY	MENTAL SKILLS	COMPETITION	OTHER
"Fundamentals" stage of athlete development. Boys and Girls 8 years (girls) and 8-9 years (boys) - second step in the Fundamentals stage	NCCP Community Coach (i.e. completed NCCP Community Coaching (CC) workshop) Minimum 26 hrs. training.	Varied terrain, groomed tracks for skating and classic techniques. Daylodge in stadium area. Continue to make use of ski playgrounds/ terrain parks. Lit ski playground.	Master fundamental movement skills, develop overall motor skills. Acquire basic cross- country ski skills (both classic and skating techniques); equal use of techniques; develop downhill abilities. Focus on balance, agility and rhythm. Use "Snow Goals" to encourage time on snow. Good technique habits are developed through repeated practice.	Develop linear, lateral and multi- directional speed with the duration of repetitions less than five seconds. Avoid anaerobic (capacity and power) efforts (i.e. 30-90 sec at highest intensity.	Introduce basic flexibility exercises. Introduce strength exercises using the child's own body weight, medicine balls, Swiss balls.	Create awareness of the importance of mental skills. Exposure to positive thinking skills to build confidence and the ability to cope with stress. Integrated mental, cognitive and emotional development.	Ski tournaments, club relays, treasure hunts, year-end activities. 4-6 races/ season Distance: 0.5 to 1 km (5 - 10 min.) Sprints: 100-200 m (skills race) Introduce competition in a team environment whenever possible. Adapt race distances to time guidelines for the stage of development. No racing below -15°C.	Ensure appropriate ski equipment including waxable skis. Practice sessions: two per/wk, minimum 30 on- snow sessions, 90 min. organized activity plus supervised active ski play, 10 pre-ski season/ classroom sessions. Practice sessions should be well- structured and monitored. Time on skis in addition to practice sessions - as many ski playground experiences as possible (several times a week). Basic ski care. Encourage inter- club social, skill and fitness-oriented ski activities (e.g. camps) during the ski season. Develop a team/ social atmosphere.

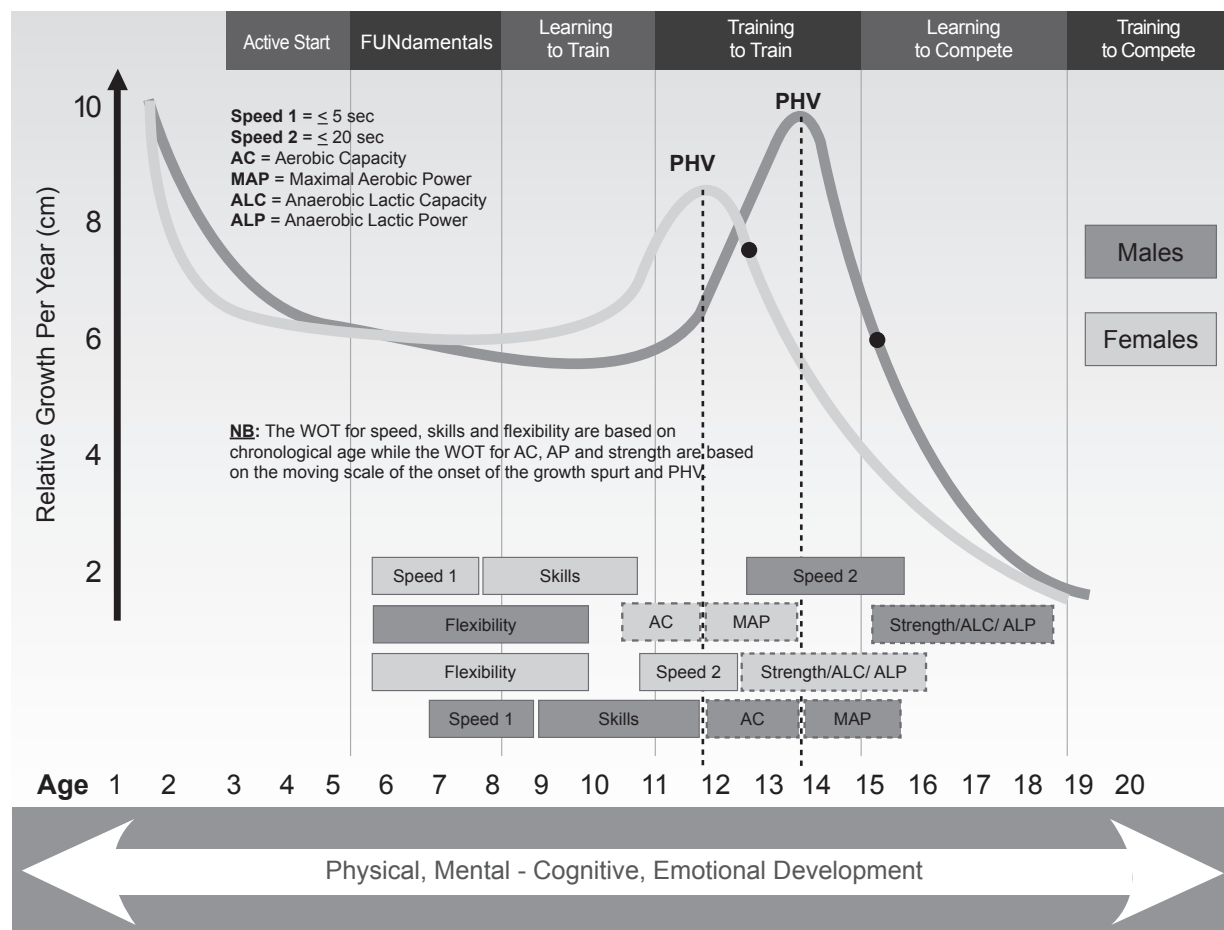




2.5 Trainability

Trainability has been defined as the responsiveness of developing individuals at different stages of growth and maturation to the training stimulus. Although all systems are always trainable, some periods of growth and development provide windows of enhanced trainability.

Figure 2.5: Pacific Sport Windows of Optimal Trainability (adapted from Balyi and Way, 2005)



The five Basic S's of training are: stamina (endurance), strength, speed, skill and suppleness (flexibility). Of those five, three have windows of optimal trainability that are relevant to children in the FUNDamentals stage of development:

- ❑ **Skill.** Provide the base requirements for future advances in movement capacity. The window for optimal skill training begins late in the FUNDamentals stage of development (nine years of age for boys and 8 years of age for girls). This window ends at the onset of the growth spurt.
- ❑ **Speed.** Window of optimal trainability (Speed 1) for girls, and also for boys at the end of this stage. Develop linear, lateral and multi-directional speed with repetitions of duration of less than five seconds. For more information refer to section 4.3 of the CCI Learning to Train (Dryland) Reference Material.





- ❑ **Suppleness (Flexibility).** Basic static and dynamic flexibility/stretching exercises should be introduced in an appropriate setting, with an emphasis on proper technique. Development can occur through participation in a variety of off-snow activities. The window of optimal trainability for suppleness in both boys and girls occurs between six and 10 years of age. For more information refer to section 4.2 of the CCI Learning to Train (Dryland) Reference Material.

There is evidence that supports the fact that there is a high degree of variation in the trainability of children, both from the standpoint of magnitude of change and the time course of response to a given stimulus. This diversity must be taken into consideration when teaching skills to children.





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