



Cycling **CANADA** Cyclisme

Long-Term Athlete Development Winning BMX





PHOTO: FQSC

We acknowledge the financial support of the Government of Canada through Sport Canada, a branch of the Department of Canadian Heritage.

Canada

Contents

1 – Winning BMX	2
2 – The BMX Long-Term Athlete Development Model	3
3 – BMX and Growth and Development.	4
4 – Developing Winning Skills.	5
5 – The Stages of BMX for Fun and Skill	8
6 – The Role of Competition	13
7 – The Stages of BMX for Performance.	14
8 – Building Canadian BMX	19
9 – From Winning BMX to Winning for Life	20
Resources and Contacts	23

Acknowledgements

Cycling Canada thanks the following for their contribution to this document:

- Brendan Arnold
- Adam Muys
- Mathieu Boucher
- Paul Jurbala

Document edited and prepared by Paul Jurbala, communityactive

Design: John Luimes, i. Design Group

ISBN# 978-0-9809082-6-8



PHOTO: FGSC

1 – Winning BMX

What does it mean to win at BMX?

BMX is really two sports. For young riders, up to about 12 years old, BMX racing is fun, fast and competitive. Winning races may seem important, but what really counts is fun, friendship, developing skills, and learning the lessons of sport. By participating in BMX as one of many sports, the rider develops physical literacy, the basic movement and sport skills which are the foundation of athleticism. Winning in this BMX means building great skills, remaining physically active, and developing a life-long love of cycling and sport. We call this “BMX for Fun and Skill”.

There is a second sport we call “BMX for Performance”. When the rider is ready, beginning around age 13 or 14, he or she can start developing the physical abilities, competition skills and experience that leads to World Championship and Olympic podiums. Reaching the top in this sport takes years of hard work and dedication. It demands excellent skills, athletic abilities, speed and power. *There is a secret to success: the well-developed BMX skills from “BMX for Fun and Skill” and the overall athleticism learned in other sports is the first step onto the podium.* Without those skills, it is difficult to reach the highest levels.

This document is a guide to winning in both kinds of BMX. It is based on principles of Long-Term Athlete Development. LTAD is based on sport science research combined with the practical experience of working with thousands of athletes and coaches to develop a comprehensive set of principles for effective athlete development. LTAD is more than a model - it is a system and philosophy of sport development. Since athlete and participant development is at the core of Cycling Canada’s mission, LTAD is key to everything we do, whatever our role or level within the cycling system. Our obligation is to help every Canadian cyclist fulfill their aspirations and be the best they can be.

Our goal is not simply to help Canadian BMXers onto international podiums, but to ensure that every athlete can enjoy participation in cycling for a lifetime.



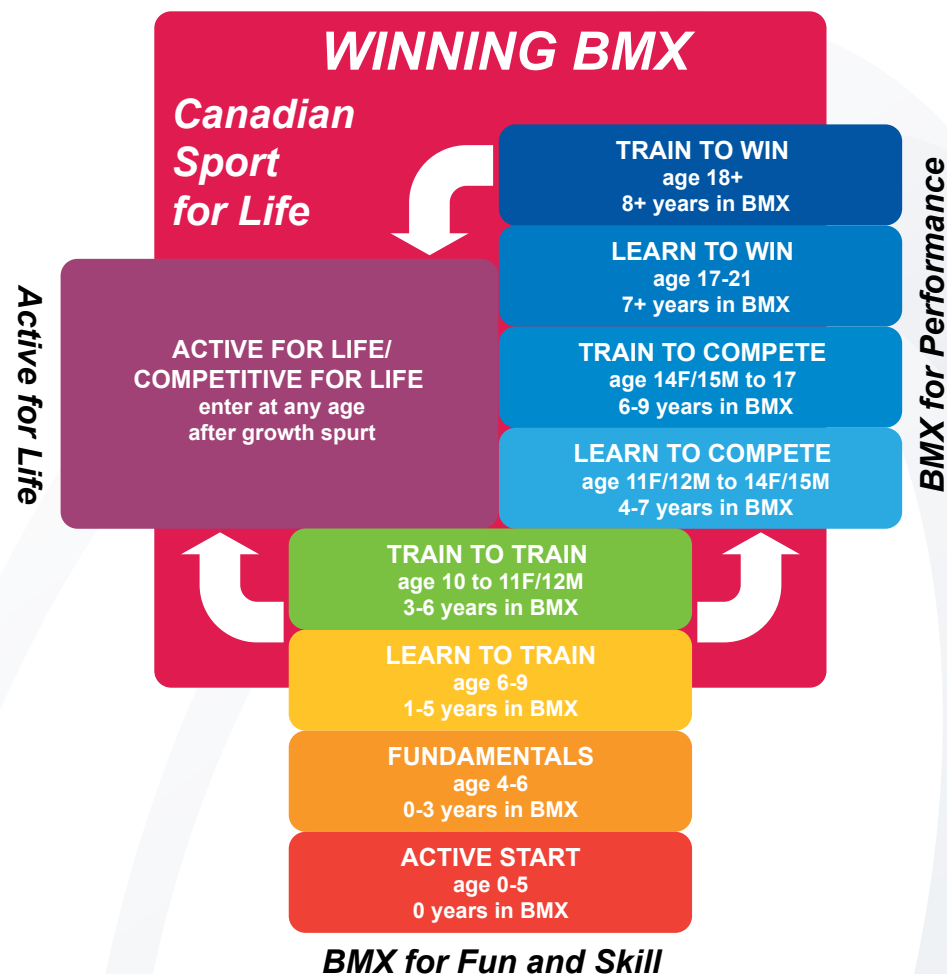
PHOTO: ROB JONES

2 – The BMX Long-Term Athlete Development Model

LTAD is a model of life-long development in which the athlete passes through stages, from Active Start to Active for Life. All individuals pass through the Active Start, FUNdamentals and Learn to Train stages from birth through adolescence, and acquire a critical foundation of physical literacy or competence in basic movement and sport skills. From there they progress as far as their will and potential carry them. Only a few reach the level of high performance of the Train to Win stage. Cycling Canada's *LTAD Volume 1* document outlines the stages of development for cyclists including BMX. You can also find other resources at www.canadiansportforlife.ca

Compared to other types of cycling and many other sports, BMX riders often begin at a very young age. This places a special responsibility on BMX coaches, leaders, and parents of young BMX riders. It is essential to understand that when working with young participants, we are not simply preparing them for our sport, but for all sports- and that by offering well-rounded development that builds physical literacy, we are also preparing them for a more active, healthy lifestyle. Equally important, young athletes of the same chronological age can vary widely in their development, ability to learn skills, and emotional readiness for competition. Over-emphasis on skills and tactics the athlete is not ready to learn, or intensive competition, can take the fun out of BMX. Every young athlete deserves a program appropriate to their individual stage of development.

The BMX Cycling model has 9 stages, which take a rider from learning to ride a bicycle through to participation for life. Not all cyclists pass through the Excellence stages; after learning the basics in the early stages an individual can move to the Active for Life stage at any time. Active life-long participation is as important as competitive success.



3 – BMX and Growth and Development

Long-term Athlete Development (LTAD) is a pathway for optimal training, competition and recovery throughout an athlete’s career, particularly in relation to the important growth and development years of young people.

LTAD stages are based on “sport years” which is the time spent developing in sport. The prior sport experience of the athlete, combined with his/her individual stage of physical, mental and emotional development, is much more important than chronological age in determining what the athlete is ready for. Notice that the overlap between “sport years” in each stage may permit some athletes to progress through more than one stage per year. *It is strongly recommended the athlete not be “pushed” through more than two stages per year, no matter how “exceptional” they seem to be.*

It is also very important to take advantage of sensitive periods of adaptation as the child grows and develops. The mind and body are most able to develop in specific ways at specific times. Skills, for example, are learned quickly from about age 8 to 12. Physical strength, power and endurance can be developed after the growth spurt, also called “Peak Height Velocity” (PHV). See *the glossary for definitions.*

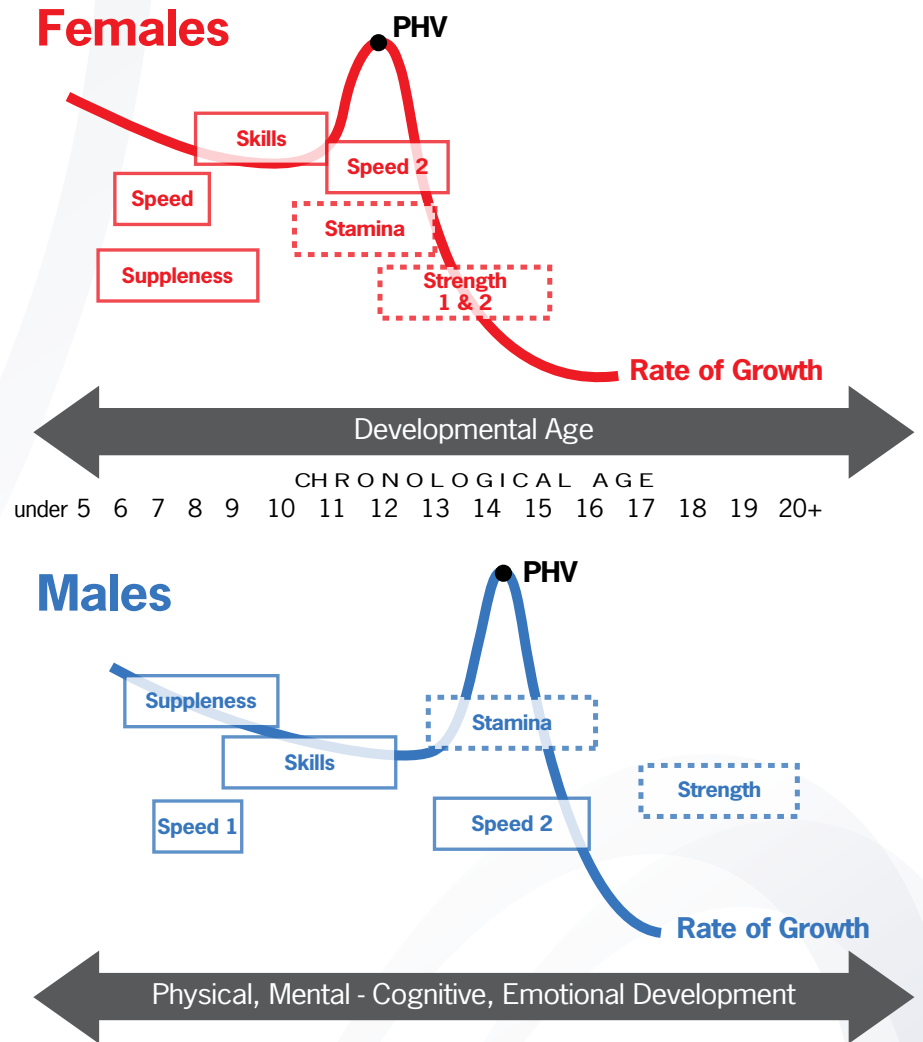


Diagram: Enhanced Periods of Adaptation in Relation to Rate of Growth (courtesy Canadian Sport for Life)

4 – Developing Winning Skills

BMX skills, including starting, pedaling at high speeds, cornering, passing, and jumping, are the foundation of winning BMX. These skills are best developed when the athlete is from 8 to 12 years old, a sensitive period of adaptation for the body and mind. *High performance in BMX is impossible to reach without these skills*, and the skills can transfer to other kinds of cycling and to other sports. It makes sense to focus on developing winning skills.

What is the best way to develop those winning skills? Here are the lessons learned by top coaches and sport scientists:

- Skills learning can only occur if the learner is interested and engaged. Since young children have short attention spans, the best learning is through fun games specifically designed to build skills.
- Even in older children and adults, skills are learned best when learners use an experimental approach, trying out variations of the skill to see what works best. The coach provides feedback only when performance falls outside pre-determined limits, and questions the athlete afterward, effectively asking the athlete to discover determine what works for him/herself.
- Randomized practice, “difficult-first” instruction, and use of questioning and video to enhance feedback are all part of top skill development programs.
- When learners are highly motivated, they engage in “deliberate practice”. This is a highly focused, individual approach of trying a skill hundreds of times to perfect it. Nobody can make an athlete use deliberate practice—the urge comes from within. When a coach sees an athlete engaging in deliberate practice, he or she should support and guide it.

What does this look like in BMX? Here are some examples:

- Riders using flat pedals (not clips) for all kinds of skill learning, right through their careers. By using flat pedals the rider has to learn correct form for many skills including hops, manuals and jumps, as he/she can't pull the bike up by the pedals.
- Deliberate use of participation in other sports to develop well-rounded athleticism on land, in water, and on ice and snow, developing balance,

agility, object-control (e.g. ball- or puck-handling) and eye-hand and eye-foot coordination.

- Riders playing all kinds of coach-led games, on and off the bike, to develop a wide range of skills.
- A good mix of relaxed fun and intense concentration during activities.
- Coaches who know how to mix up activities and try different approaches to help riders “get” a skill- not just by telling, but by demonstrating, trying different movements, and watching different situations and advanced riders.
- Advanced riders helping newer riders out, and being role models for them.

The following BMX Skills Grid shows a repertoire of BMX skills and suggests when they can be developed.



PHOTO: FQSC

BMX SKILLS DEVELOPMENT GRID

Pathway	Fundamental			Learn to Train			Train to Train			Learn & Train to Compete		Learn & Train To Win	
Chronological Age – M	6	7	8	9	10	11	12	13	14	15	16	17	18+
Chronological Age – F	5	6	7	8	9	10	11	12	13	14	15	16	17+
Training Age (Sport Years)	0 – 3 years			1 – 5 years			3 – 6 Years			4 – 9 years		>8 years	
Skill Development	ACQUISITION (A) Introduction of skill (movement patterning) Cognitive Stage			CONSOLIDATION (C) Stability of skill through practice (correct execution in variable conditions) Associative Stage				REFINEMENT (R) Fine tuning of skills (Minor improvements and creative solution under all conditions) Autonomous Stage					
NCCP Coaching Contexts	Community Initiation						Competition – Introduction			Comp-Dev	Comp-HP		
Foundation Skills	Balance	A – C			R								
	Agility	A – C			R								
	Run Jump Throw+	A – C			R								
	Basic cycling skills	A – C			R								
Motor Skills	Increase leg speed				A – C			R					
	Balance-gate				A – C			R					
	Agility on bike				A – C			R					
Technical Skills-Start	Body position				A – C								
	Pedal position				A – C			R					
	Pre-load/pre-snap				A			C – R					
	Snap				A			C – R					
	First pedal strokes				A			C – R					



PHOTO: FQSC

Technical Skills- Jumping	Pumping & rolling					A			C - R		
	Bunny hop (flat pd)					A			C - R		
	Rear wheel hop					A			C - R		
	Pre-manual					A			C - R		
	Manual (single)					A			C - R		
	Manual (multiple)					A			C - R		
	Wheelie (coaster)					A			C - R		
	Wheelie (seated)					A			C - R		
	Speed jump single								A - C		R
	Speed jump double								A - C		R
	Jumping style								A - C		R
Technical Skills- Cornering	Basic- lean, pedals					A - C			R		
	Speed control					A - C			R		
	Pedal positioning					A - C			R		
	Contact with riders					A			C - R		
Tactical Skills	Track posit'n start					A			C		R
	Cornering lines					A			C		R
	Assess track layout & choose strategy								A		C
	Assess track layout & choose gearing								A		C
Mental & Decision Skills	Use track layout to improve position								A		C - R
	React to crashes and maintain speed/ position								A		C - R
	Visualization								A		C
	Focus & re-focus between heats								A		C
	Develop ideal perf state (IPS) routine								A		C

5 – The Stages of BMX for Fun and Skill

The following table shows key BMX developmental factors for the first LTAD stages from Active Start to Train to Train, and Active for Life. For more information on Cycling’s LTAD refer to Cycling Canada’s LTAD Volume 1. Stages are based on both chronological age and “sport years” which is the time the athlete spent developing in sport.

	ACTIVE START Age 0 - 5 0 - 1 years in sport	FUNDAMENTALS Age 4 - 6 0 – 3 years in sport	LEARN TO TRAIN Age 6 - 9 1 – 5 years in sport	TRAIN TO TRAIN Age 10 - 12 3 – 6 years in sport	ACTIVE FOR LIFE any age after growth spurt
Defining the Stage	<ul style="list-style-type: none"> • “Develop movement literacy” Participant builds basic movement skills through a wide variety of unstructured fun physical activities on land, in water, and sliding on snow and ice. • Later in the stage the participant learns to ride a bike. 	<ul style="list-style-type: none"> • “Developing physical literacy” Participants take basic movement skills and adapt them to sport, while learning basic sport concepts of rules and competition. • Learn basic sport skills through participation in multiple sports including cycling. 	<ul style="list-style-type: none"> • “Developing skills” Participants build on a base of physical literacy formed in the Active Start and FUNdamentals stages. • Introduction to a sport training program. • Major emphasis on acquiring and developing BMX skills. • Participation in multiple sports including cycling. 	<ul style="list-style-type: none"> • “Building the engine” • Enjoy and appreciate the <u>sport</u> of BMX cycling • Participate in a progressive BMX cycling training program. Build fitness by practicing skills in race and game situations. • Major emphasis on developing and refining cycling skills. • Participation in multiple sports. 	<ul style="list-style-type: none"> • “Maintain activity, give back” • Enjoy and appreciate the sport of cycling • Emphasis on maintaining fitness through year-round activity. • Participation in multiple sports including cycling. • Look for leadership opportunities e.g. coaching, officiating
Participant Profile	<ul style="list-style-type: none"> • From age 0 to 6 years old, a child is a “learning machine” full of curiosity and always on the move. Brain connections are being made and the body is growing rapidly. • The child has a short attention span and needs lots of variety and frequent breaks. • Social play with other children develops gradually, but the child loves to imitate and play with parents. • Limited ability to grasp concepts like sport rules but lots of imagination to create their own games. 	<ul style="list-style-type: none"> • From age 0 to 6 years old, a child is a “learning machine” full of curiosity and always on the move. Brain connections are being made and the body is growing rapidly. • The child has a short attention span and needs lots of variety and frequent breaks. • The child loves to imitate parents and “bid kids” • Limited ability to grasp concepts like sport rules but lots of imagination to create their own games. 	<ul style="list-style-type: none"> • Moving into formalized sport and competition. • Windows of trainability are important: unloaded speed (e.g. leg speed) and skills are trainable in this stage. • Participant typically most interested in being with friends and experiencing the fun of competition. • Participant lacks long-term goal focus and may not be interested in “serious training”. Focus on fun. 	<ul style="list-style-type: none"> • Well-adapted and becoming more confident about sport. • Becoming serious about BMX- “loving the sport”. • Participant may be any age, but if under age 12-15 windows of trainability are critical. • Participant wants to compete, and positive race experiences are important. 	<ul style="list-style-type: none"> • Confident about sport participation. • Enjoys cycling. • Participant may be any age after adolescence (basic physical literacy is developed). • Sport participation is important to physical and emotional well-being and is a part of social life.

	ACTIVE START Age 0 - 5 0 - 1 years in sport	FUNDAMENTALS Age 4 - 6 0 – 3 years in sport	LEARN TO TRAIN Age 6 - 9 1 – 5 years in sport	TRAIN TO TRAIN Age 10 - 12 3 – 6 years in sport	ACTIVE FOR LIFE any age after growth spurt
Basic Cycling Objectives	<ul style="list-style-type: none"> Learn how to ride a bike Learn the most basic cycling skills: balance, steering, braking. Build general activity level and movement skills through cycling and other sports 	<ul style="list-style-type: none"> Learn how to ride a bike Learn basic cycling skills: straight-line riding, using controls (eg hand brake), pedal standing up. Build general activity level and movement skills through cycling and other sports 	<ul style="list-style-type: none"> Learn more advanced cycling skills. Adapt to sport training. Develop good position on bicycle and pedaling technique and speed. Build general activity level and fitness through cycling and other sports. 	<ul style="list-style-type: none"> Consolidate advanced cycling skills Work with a good coach to adapt to BMX cycling specific training routine Enter regular competition Build cycling fitness through cycling and other sports 	<ul style="list-style-type: none"> Maintain regular physical activity May compete as desired Find ways to give to sport as a coach, official or leader
BMX-specific Objectives & Support	<ul style="list-style-type: none"> Explain that “the big track”, jumps, racing, etc are for riders who have learned sound basic cycling skills. Provide a “mini-track” with suitable terrain for new riders- the equivalent of the “bunny hill” in downhill skiing. Use flat pedals only (no clips). Do not use placings, times, or standings if fun competitions are permitted. Instead, praise riders for good skill execution and trying hard. 	<ul style="list-style-type: none"> Provide a “mini-track” with suitable terrain for new riders- the equivalent of the “bunny hill” in downhill skiing. Begin to use “the big track” (regular track) but do not introduce advanced cycling skills until the basics are mastered. Use flat pedals only (no clips) to help riders master the skills, especially jump skills. Develop higher pedal rates e.g. 100-120 revolutions per minute (rpm) Minimize use of placings, times, or standings in competitions. Use a system of identifying and rewarding good skill execution. 	<ul style="list-style-type: none"> Use the regular BMX track but continue to refine basic skills using “off-track” sessions. Use flat pedals only (no clips) to help riders master jump skills. Depending on rules, clips may be introduced near the end of this stage for races but riders should continue using flat pedals part of the time for skill practice. All the key race start and jump skills, and some basic tactical (positioning) skills, are learned in this stage. The main focus is <u>skill development</u> not competition. De-emphasize competition results based on place or standings in competitions. Emphasize more “controllable” aspects such as times, good positioning, good use of skills. Continue to develop higher pedal rates e.g. 120-140 rpm. 	<ul style="list-style-type: none"> Continue to refine basic skills using “off-track” sessions. Continue using flat pedals part of the time for skill practice. All the key race start and jump skills are consolidated in this stage. More advanced tactical skills are added. The main focus is <u>skill and tactical development</u>. Continue to develop higher pedal rates e.g. 140+ rpm. Continue to emphasize “controllable” race results such as times, good positioning, good use of skills and tactics. 	<ul style="list-style-type: none"> Access to equipment and facilities Access to coach if desired Access to appropriate sport programs

	ACTIVE START Age 0 - 5 0 - 1 years in sport	FUNDAMENTALS Age 4 - 6 0 - 3 years in sport	LEARN TO TRAIN Age 6 - 9 1 - 5 years in sport	TRAIN TO TRAIN Age 10 - 12 3 - 6 years in sport	ACTIVE FOR LIFE any age after growth spurt
Physical Development	<ul style="list-style-type: none"> Daily activity: minimum 30 minutes/day for toddlers and 60 minutes/day for preschoolers. FUN activities on land, in water and air, and sliding on snow and ice. Encourage running, with stops, starts and changes in direction. Catching and throwing games using a wide range of soft objects, and balls of different sizes. Start with two hands then progress to using left and right hands to catch and throw. Balance, jump, slither like a snake, and roll like a rolling pin. Use hands, feet and other body parts to balance, push and jump. Ride a tricycle or bike. 	<ul style="list-style-type: none"> Physical literacy: further development of basic movement skills including locomotor, object control and balance and agility skills. Speed, power and endurance through FUN and games Strength: Introduction to core strength and stability through fun games Warm up/cool down: Introduce the concept 	<ul style="list-style-type: none"> Be aware of and monitor maturation which may occur at different rates. Do not emphasize speed, power or endurance; develop only through FUN and games Introduction to concept of warm up/cool down 	<ul style="list-style-type: none"> Be aware of and monitor maturation which may occur at different rates. Use skill-building activities such as high repetitions of starts or practice races to develop speed, power and endurance. Strength: Build core strength and stability- using own body weight exercises. Refine warm up/cool down Aerobic and anaerobic power: Mix of development through fun and games, and specific development. Note window of trainability at growth spurt (ages 11-12 girls, 12-13 boys). 	<ul style="list-style-type: none"> Speed, power and endurance through FUN and games Strength: Build core strength and stability- use own body weight or weights as desired Aerobic power: Mix of development through fun and games, and specific development. Participation in multiple sports and activities
Technical Development	<ul style="list-style-type: none"> Explore risks and limits in a secure environment. Learn to ride a bike. Develop basic cycling skills: turn, climb, descend, accelerate, brake. 	<ul style="list-style-type: none"> Explore risks and limits in a secure environment Develop good cycling position and pedaling technique Develop basic cycling skills: turn, climb, descend, accelerate, brake, small jumps. Focus on motivating and FUN activities 	<ul style="list-style-type: none"> Continue to develop new skills in progressively challenging situations (e.g weight transfer, pumping, manuals, jumping, braking from speed, standing, balancing, wheel lifts, etc) Gate starts, bunny-hop a 2x4 Continue to explore risks and limits in safe environment. 	<ul style="list-style-type: none"> Continue to develop new skills in progressively challenging situations (e.g weight transfer, pumping, manuals, jumping, braking from speed, standing, balancing, wheel lifts, etc) Gate starts- refine motion and timing Bunny-hop 1' Perfect manoulling; introduce double-manoulling Continue to explore risks and limits in safe environment. 	<ul style="list-style-type: none"> Develop and maintain good cycling position and pedaling technique, cycling skills Focus on motivating and FUN activities

	ACTIVE START Age 0 - 5 0 - 1 years in sport	FUNDAMENTALS Age 4 - 6 0 – 3 years in sport	LEARN TO TRAIN Age 6 - 9 1 – 5 years in sport	TRAIN TO TRAIN Age 10 - 12 3 – 6 years in sport	ACTIVE FOR LIFE any age after growth spurt
Tactical Development	<ul style="list-style-type: none"> Watch races. Understand basic concept of racing: idea of “first across the line” 	<ul style="list-style-type: none"> Learn basic concepts and rules of BMX: race, moto. Develop basic tactics, ethics Watch races for learning 	<ul style="list-style-type: none"> More advanced concepts and rules of competition Develop race tactics: maintain speed on whole run, track positioning, corner positioning, best line, hi-lo passing. 	<ul style="list-style-type: none"> Refine race tactics: maintain speed on whole track, track positioning, corner positioning, best lines, passing. 	<ul style="list-style-type: none"> Tactics appropriate to level of racing (if desired)
Motor & Mental Skill Development	<ul style="list-style-type: none"> Motor learning integrated into practices through games Focus on motivating and FUN activities 	<ul style="list-style-type: none"> Motor learning integrated into practices through games Focus on motivating and FUN activities Emphasize effort, doing one’s best, being a “good sport” 	<ul style="list-style-type: none"> Motor learning integrated into practices through games. Develop leg speed (120+ rpm) and reaction time. Develop appropriate attitude to competition: doing one’s best, respect for other racers, coaches and officials. 	<ul style="list-style-type: none"> Motor learning integrated into practices through games. Develop leg speed (140+ rpm) and reaction time. Develop appropriate attitude to competition: doing one’s best, respect for other racers, coaches and officials. 	<ul style="list-style-type: none"> Mental skill development appropriate to level of racing (if desired)
Training Program	<ul style="list-style-type: none"> No organized training in this stage. 	<ul style="list-style-type: none"> Limited introduction to “training” if desired. Program is based on fun, games, skill development. By end of stage, 2-3 x per week, 30-45 mins/session. 	<ul style="list-style-type: none"> Seasonal training program Participate in multiple other sports and cycling disciplines to build athletic skills. By end of stage, 3-5 x per week in BMX season, 60 min per session. 	<ul style="list-style-type: none"> Seasonal or annual training program with single periodization By end of stage, 3-5 x per week in season, 90 min per session. 	<ul style="list-style-type: none"> Daily physical activity Training appropriate to level of competition desired, if any Participation in multiple sport activities
Competition Framework	<ul style="list-style-type: none"> No organized competition in this stage. 	<ul style="list-style-type: none"> Limited introduction to competition if desired and appropriate to athlete. Late in stage, enter club, regional, provincial races leading to Provincial Championships. 	<ul style="list-style-type: none"> Racing on flat pedals is recommended. Training and competition with others is useful for development in this stage. This may include club programs, training groups, camps, etc. Introduction to regular competition if desired and appropriate to athlete: Club, regional, provincial races leading to Provincial Championships and Games. 	<ul style="list-style-type: none"> Provincial-level racing; introduce National-level near end of stage including National Championships Provincial Games Provincial Training Camps for Team selection 	<ul style="list-style-type: none"> Competition if desired and appropriate to athlete

	ACTIVE START Age 0 - 5 0 - 1 years in sport	FUNDAMENTALS Age 4 - 6 0 – 3 years in sport	LEARN TO TRAIN Age 6 - 9 1 – 5 years in sport	TRAIN TO TRAIN Age 10 - 12 3 – 6 years in sport	ACTIVE FOR LIFE any age after growth spurt
Parents help by...	<ul style="list-style-type: none"> Allow lots of room for exploration and risk-taking in a safe environment. Promote physical activity and healthy eating as a family activity. Role modeling is very important. Provide short-duration, rapidly changing activities with lots of breaks. Let the child's attention span and interest dictate the activity. These are the "sampling" years. Support the child to participate in many kinds of activity including many kinds of sport. 	<ul style="list-style-type: none"> Look for coaches who are National Coaching Certification Program trained. Continue to support "sampling" participation in many kinds of activity including many kinds of sport. Support skills, skills, skills. Emphasize fun, friendships, and honest effort in your child's sport experiences. Remember children can be far apart in maturation: don't compare to others. 	<ul style="list-style-type: none"> Look for coaches who are National Coaching Certification Program certified. Continue to support "sampling" participation in many kinds of activity including many kinds of sport. Minimize signaling that winning is important; don't ask "how did you do?" but instead emphasize fun, friendships, and honest effort. 	<ul style="list-style-type: none"> Look for coaches who are National Coaching Certification Program certified in Introduction to Competition. These are the "support" years. The child is beginning to specialize by reducing the number of other sports- 2 or 3 at most. Parents help by assisting the child to get to practice and competitions, ensuring equipment is safe, and supporting the coaches' decisions. Don't add pressure to your child by emphasizing winning and performance; instead, remove pressure by letting him/her make their own decisions and supporting them by ensuring they have looked at all options and opportunities. 	<ul style="list-style-type: none"> Supporting all kinds of sport activity and interests, including learning to coach or officiate. Supporting non-competitive sport interests.
Coaching	<ul style="list-style-type: none"> Parents, family, and teachers are the main "coaches" at this stage. BMX coach should be Let's Ride! Community Cycling Initiation – trained (NCCP) 	<ul style="list-style-type: none"> Let's Ride! Community Cycling Initiation – trained, or Coach working toward certification in Ready to Race! Introduction to Competition 	<ul style="list-style-type: none"> Coach certified in Ready to Race! Introduction to Competition 	<ul style="list-style-type: none"> Coach certified in Ready to Race! Introduction to Competition 	<ul style="list-style-type: none"> Coach if appropriate and desired Community Cycling Ongoing – trained
Testing & Talent ID	<ul style="list-style-type: none"> None in this stage. 	<ul style="list-style-type: none"> None in this stage. 	<ul style="list-style-type: none"> Introduce performance measurement (by coach) based on performance of BMX skills and overall physical abilities. 	<ul style="list-style-type: none"> Introduce performance measurement (by coach) based on performance of BMX skills. Functional movement screen 	<ul style="list-style-type: none"> None in this stage.

6 – The Role of Competition

“Competition is a good servant, but a poor master.”

What do we mean when we say, “Competition is a good servant, but a poor master”?

Since athletes and coaches want to win, competition formats and schedules often determine the shape of athlete training programs. Winning is an obvious indicator of success, so it becomes easy to neglect harder-to-measure factors such as skill development and satisfaction. The highly competitive athlete, coach or parent become focused on getting to and succeeding at a series of competitions, above all else. Unless sport leaders pay careful attention to matching the format of competition to the developmental needs of athletes, the quest for success may distort development, for example, by leading a BMXer to ride with clip pedals to improve his/her start, when he/she has not yet developed skill with flat pedals. Competition has become the master.

If competition is to be a good servant rather than a poor master, the nature of BMX competitions should reflect the goals for each developmental stage, including reinforcement of social, psychological and physical development objectives. In the early “BMX for Fun and Skill” stages, enjoyment of the sport and the development of good skills are most important goals. Later, in the “BMX for Performance” stages the format of competitions should help the rider develop fitness, focus and competition abilities. Every competition should have a specific purpose tied to the athlete’s stage, whether it is to develop tactical skills, to practice for a major competition, or to perform at a Championship event. Here are some tips:

■ In the “BMX for Fun and Skills” stages:

- Introduce competition only when the rider has developed sound basic BMX skills.
- Choose competitions which use track profiles suitable for the rider’s skill level.
- Emphasize the rider demonstrating skills in competition, not winning. For example, “great position out of the start!” or “great pass on that banking!”



PHOTO: FGSC

- Avoid chasing rankings or plates.
- Avoid comparing results to other riders. Compare to previous performances- look for improvement and consistency.
- Avoid excessive, expensive travel to national competitions until the rider is ready (Train to Train stage).

■ In the “BMX for Performance” stages:

- Select competitions based on specific criteria: development of skills and tactics, trying a higher level of competition for learning, or trying a harder track (e.g. Supercross) for the first time.
- At first (Learn to Compete) select only a few races per season where performance and ranking matter. Increase the emphasis on performance progressively.
- Ensure there is enough time for recovery and training between competitions in the plan.

How to know when the rider is ready to move to the next stage of development and tougher competitions? Just because the rider is winning races, that does not put him or her in the “Train to Win” stage. Some stages have growth and development markers- for example, puberty marks the beginning of the time when the athlete can build strength and power, so the “BMX for Performance” stages (Learn to Compete to Train to Win) cannot begin until then. Likewise the rider is not ready for the Supercross track until he/she has the strength to manage the start and the skill and power to clear the bigger jumps, which typically cannot occur until after puberty. An experienced, trained coach usually has the best perspective on when to take the next step.

7 - The Stages of BMX for Performance

The following table shows key BMX developmental factors for the LTAD stages from Learn to Compete to Train to Win, and Active for Life. For more information on Cycling's LTAD refer to Cycling Canada's LTAD Volume 1. Stages are based on both chronological age and "sport years" which is the time the athlete spent developing in sport.

	LEARN TO COMPETE Age 12 - 15 4 - 7 years in sport	TRAIN TO COMPETE Age 15 - 17 6 - 9 years in sport	LEARN TO WIN Age 17 - 21 7+ years in sport	TRAIN TO WIN Age 18+ 8+ years in sport	ACTIVE FOR LIFE any age after growth spurt
Defining the Stage	<ul style="list-style-type: none"> • "Optimizing the engine" • Major focus on implementing skills learned earlier in competition; learning through competition. • Continuing to refine and perfect technical skills. • Developing mental skills for competition. 	<ul style="list-style-type: none"> • "Optimizing the engine" • Major focus on implementing skills learned earlier in competition; and refining competition tactics and abilities in a wide range of events. • Continuing to refine and perfect technical skills. • Developing mental skills for competition. 	<ul style="list-style-type: none"> • "Maximizing the engine" Major focus is developing speed and power. • Learning to perform "on demand" in high pressure competition situations. • Refining and perfecting skills and tactical skills. • Refining mental skills for competition; learning to maintain performance while balancing life skills in high performance competition. 	<ul style="list-style-type: none"> • "Performance on demand" – ability to perform at top level despite setbacks • Perfecting all physical abilities and recovery/regeneration. • Able to perform "on demand" in high pressure competition situations. • Refining and perfecting skills and tactical skills. • Refining mental skills for competition; able to maintain performance while balancing life skills in high performance competition. 	<ul style="list-style-type: none"> • "Maintain activity, give back" • Enjoy and appreciate the sport of cycling • Emphasis on maintaining fitness through year-round activity. • Participation in multiple sports including cycling. • Look for leadership opportunities e.g. coaching, officiating



PHOTO: FQSC

	LEARN TO COMPETE Age 12 - 15 4 - 7 years in sport	TRAIN TO COMPETE Age 15 - 17 6 - 9 years in sport	LEARN TO WIN Age 17 - 21 7+ years in sport	TRAIN TO WIN Age 18+ 8+ years in sport	ACTIVE FOR LIFE any age after growth spurt
Participant Profile	<ul style="list-style-type: none"> Is interested in pursuing excellence. Is prepared to train hard and focus on competitive success. Self-image becomes defined, includes sport as a major element in identity. Growth spurt and onset of puberty in this stage-implications for growth, level of fatigue, coordination, Needs support network including family, coach to maintain focus on sport career. 	<ul style="list-style-type: none"> Is serious about sport and pursuing excellence. Is prepared to train hard and focus on competitive success. Is likely experiencing life challenges in balancing school, family, personal relationships and work, which may detract from commitment to sport. Self-image includes sport as a major element in identity. Looking ahead to next steps in sport success e.g. college, National Team but may be frustrated by injury or other priorities. Needs a support network including family, coach, sport science and health care to sustain sport career. 	<ul style="list-style-type: none"> Fully committed to BMX and pursuing excellence. Training hard and focus on competitive success is a "full time job". Learning to cope with life challenges in balancing school, family, personal relationships and work, which may detract from commitment to sport. Self-image includes sport as a major element in identity. Completely focused on next steps in sport success e.g. National Team, Worlds, Olympics. Building a support network including family, coach, sport science and health care to sustain sport career. 	<ul style="list-style-type: none"> At the top – a role model. Fully committed to BMX and excellence. Working to stay on top of the BMX world. Training hard and focus on competitive success is a "full time job". Copes with life challenges in balancing school, family, personal relationships and work. Self-image includes sport as a major element in identity. Completely focused on next steps in sport success e.g. National Team, Worlds, Olympics. Has built a support network including family, coach, sport science and health care to sustain sport career. 	<ul style="list-style-type: none"> Confident about sport participation. Enjoys cycling. Participant may be any age after adolescence (basic physical literacy is developed). Sport participation is important to physical and emotional well-being and is a part of social life.



PHOTO: FQSC

	LEARN TO COMPETE Age 12 - 15 4 - 7 years in sport	TRAIN TO COMPETE Age 15 - 17 6 - 9 years in sport	LEARN TO WIN Age 17 - 21 7+ years in sport	TRAIN TO WIN Age 18+ 8+ years in sport	ACTIVE FOR LIFE any age after growth spurt
BMX-specific Objectives & Support	<ul style="list-style-type: none"> • May begin using clips in competition but continue using flat pedals part of the time for skill practice. • Key race start and jump skills are refined in this stage. • More advanced tactical skills as well as mental/decision making skills are added. The main focus is <u>tactical development</u>. • Increasing emphasis on race results (placings) and working toward consistent results. • Continue to use elements such as times, race positioning, good use of skills and tactics to help analyze race results. • Continue to develop higher pedal rates e.g. 140+ rpm. 	<ul style="list-style-type: none"> • Continue using flat pedals part of the time for skill practice. • More advanced tactical skills as well as mental/decision making skills are refined through competition. • Increasing emphasis on race results (placings) and working toward consistent results. • Continue to use elements such as times, race positioning, good use of skills and tactics to help analyze race results. • Continue to develop higher pedal rates e.g. 140+ rpm. 	<ul style="list-style-type: none"> • Continue using flat pedals part of the time for skill practice. • Advanced tactical skills as well as mental/decision making skills are refined through competition. • Exposure to Supercross track • Working toward “performance on demand”- emphasis on consistent race results. • Use elements such as section times, race positioning, video to help analyze race results. • Maintain high pedal rates e.g. 140+ rpm. 	<ul style="list-style-type: none"> • Continue using flat pedals part of the time for skill practice. • Advanced tactical skills as well as mental/decision making skills are refined through competition. • Master Supercross track • Working toward “performance on demand”- emphasis on consistent race results. • Use elements such as section times, race positioning, video to help analyze race results. • Maintain high pedal rates e.g. 140+ rpm. 	<ul style="list-style-type: none"> • Access to equipment and facilities • Access to coach if desired • Access to appropriate sport programs
Physical Development	<ul style="list-style-type: none"> • Advanced sport specific drills • Speed, power: specific sprint training • Strength: Athlete specific core strength and stability, ankle and knee stability, free weights. Sport specific strength in specific preparation phase • Warm up/cool down- integral, specific to training and competition • Anaerobic power: specific prep and competition phases, targeted development • Aerobic power: Specific training and complementary sports. 	<ul style="list-style-type: none"> • Advanced sport specific drills • Speed, power: specific sprint training • Strength: Athlete specific core strength and stability, ankle and knee stability, free weights. Sport specific strength in specific preparation phase • Warm up/cool down- integral, specific to training and competition • Anaerobic power: specific prep and competition phases, targeted development • Aerobic power: Specific training and complementary sports. 	<ul style="list-style-type: none"> • Major power development window. • Speed, power: specific sprint training • Strength: Athlete specific core strength and stability, ankle and knee stability, free weights. Sport specific strength in specific preparation phase • Warm up/cool down- integral, specific to training and competition • Anaerobic power: specific prep and competition phases, targeted development • Aerobic power: Specific training and complementary sports. 	<ul style="list-style-type: none"> • Primary focus is on adequate recovery/regeneration from intensive training and competition. • Major power development focus. • Strength: Maintain athlete specific core strength and stability, ankle and knee stability, free weights. Sport specific strength in specific preparation phase • Anaerobic power: specific prep and competition phases, targeted development • Aerobic power: Specific training and complementary sports. 	<ul style="list-style-type: none"> • Speed, power and endurance through FUN and games • Strength: Build core strength and stability- use own body weight or weights as desired • Aerobic power: Mix of development through fun and games, and specific development. • Participation in multiple sports and activities

	LEARN TO COMPETE Age 12 - 15 4 - 7 years in sport	TRAIN TO COMPETE Age 15 - 17 6 -9 years in sport	LEARN TO WIN Age 17 - 21 7+ years in sport	TRAIN TO WIN Age 18+ 8+ years in sport	ACTIVE FOR LIFE any age after growth spurt
Technical Development	<ul style="list-style-type: none"> Continue using flat pedals part of the time for skill practice. Perfecting all BMX skills. Jump analysis and progression from 10' to 25' Jumping various obstacles and jump profiles. 	<ul style="list-style-type: none"> Continue using flat pedals part of the time for skill practice. Perfecting all BMX skills. Jump analysis and progression from 10' to 25' Initial experience on Supercross track 	<ul style="list-style-type: none"> Continue using flat pedals part of the time for skill practice. Perfecting all BMX skills. Mastering Supercross track Innovating skills and tactics 	<ul style="list-style-type: none"> Continue using flat pedals part of the time for skill practice. Perfecting all BMX skills. Mastering Supercross track Innovating skills and tactics 	<ul style="list-style-type: none"> Develop and maintain good cycling position and pedaling technique, cycling skills Focus on motivating and FUN activities
Tactical Development	<ul style="list-style-type: none"> Advanced tactics, execution of a race plan: multi-round moto strategy. Perfecting moto tactics. 	<ul style="list-style-type: none"> Advanced tactics, perfecting race plan: multi-round moto strategy. Perfecting moto tactics. 	<ul style="list-style-type: none"> Advanced tactics, execution of a race plan & multi-round moto strategy. Perfecting moto tactics. Advanced knowledge of competitors 	<ul style="list-style-type: none"> Advanced tactics, execution of a race plan & multi-round moto strategy. Perfecting moto tactics. Advanced knowledge of competitors Innovating tactics 	<ul style="list-style-type: none"> Tactics appropriate to level of racing (if desired)
Mental Skill Development	<ul style="list-style-type: none"> Focus on decision-making in races and understanding consequences Development of competition routines pre-race, post-race 	<ul style="list-style-type: none"> Race focus, decision-making Refining competition routines pre-race, post-race Life skills, team relations, managing distraction 	<ul style="list-style-type: none"> Race focus, decision-making Perfect competition routines pre-race, post-race Life skills, team relations, managing distraction, coping with adversity, time management 	<ul style="list-style-type: none"> Race focus, decision-making Perfect competition routines pre-race, post-race Life skills, team relations, coping with adversity, time management 	<ul style="list-style-type: none"> Mental skill development appropriate to level of racing (if desired)
Training Program	<ul style="list-style-type: none"> 300-600 training hours per year. 4 to 6 sessions per week; 7 to 10 hrs/week. Sessions up to 2.00- 3:00 hrs May participate in up to 1-2 other sports but is now specializing in BMX Single periodization- 1 main competition with multiple sub peaks 	<ul style="list-style-type: none"> 400-750 training hours per year. 5 to 8 sessions per week; 9 to 16 hrs/week. Sessions up to 2.00- 3:00 hrs May participate in up to 1 other sport but is now specializing in BMX Single periodization- 1 main competition with multiple sub peaks 	<ul style="list-style-type: none"> 500-1000 training hours per year. 6 to 10 sessions per week; 10 to 20 hrs/week. Sessions up to 2.00- 3:00 hrs May participate in up to 1 other sport but is now specialized in BMX Multiple periodization- multiple peaks 	<ul style="list-style-type: none"> 600-1000 training hours per year. 6 to 10 sessions per week; 10 to 20 hrs/week. Sessions up to 2.00- 3:00 hrs May participate in up to 1 other sport but is now specialized in BMX Multiple periodization- multiple peaks 	<ul style="list-style-type: none"> Daily physical activity Training appropriate to level of competition desired, if any Participation in multiple sport activities

	LEARN TO COMPETE Age 12 - 15 4 - 7 years in sport	TRAIN TO COMPETE Age 15 - 17 6 - 9 years in sport	LEARN TO WIN Age 17 - 21 7+ years in sport	TRAIN TO WIN Age 18+ 8+ years in sport	ACTIVE FOR LIFE any age after growth spurt
Competition Framework	<ul style="list-style-type: none"> • Train and compete in provincial program and provincial/national selection camps. • Major focus is National Championships. • First exposure to international competition. 	<ul style="list-style-type: none"> • National and initial International races • National Championships • National Development Camps • Provincial Team • Canada Games 	<ul style="list-style-type: none"> • International races and initial World Cup races • National Championships • National races • National Team Camps 	<ul style="list-style-type: none"> • International races: World Cup, World Championships, Major Games • National Championships • National races • National Team Camps 	<ul style="list-style-type: none"> • Competition if desired and appropriate to athlete
Parents help by...	<ul style="list-style-type: none"> • These are the “support” years. The athlete is beginning to specialize by reducing the number of other sports- 1 or 2 at most. • Parents help by assisting the athlete to get to practice and competitions, ensuring equipment is appropriate quality, and supporting the coaches’ decisions. • Don’t add pressure by emphasizing winning and performance; instead, remove pressure by letting him/her make their own decisions and supporting them by ensuring they have looked at all options and opportunities. 	<ul style="list-style-type: none"> • These are the “support” years. The athlete is beginning to specialize by reducing the number of other sports- 1 or 2 at most. • Parents help by assisting the athlete to get to practice and competitions, ensuring equipment is appropriate quality, and supporting the coaches’ decisions. • Don’t add pressure by emphasizing winning and performance; instead, remove pressure by letting him/her make their own decisions and supporting them by ensuring they have looked at all options and opportunities. 	<ul style="list-style-type: none"> • These are the “investment” years. The athlete is mature, capable of making their own decisions and has specialized in BMX. Parents help by providing financial assistance and being there to offer extra support as needed. 	<ul style="list-style-type: none"> • These are the “investment” years. The athlete is mature, capable of making their own decisions and has specialized in BMX. Parents help by providing financial assistance and being there to offer extra support as needed. 	<ul style="list-style-type: none"> • Supporting all kinds of sport activity and interests, including learning to coach or officiate. • Supporting non-competitive sport interests.
Coaching	<ul style="list-style-type: none"> • BMX coach certified in NCCP Competition Development • Personal coach and may be working with Provincial Team Coaches 	<ul style="list-style-type: none"> • BMX coach certified in NCCP Competition Development • Personal coach and may be working with Provincial and National Team Coaches 	<ul style="list-style-type: none"> • BMX coach certified in NCCP High Performance • Personal coach and may be working with Provincial and National Team Coaches 	<ul style="list-style-type: none"> • BMX coach certified in NCCP High Performance • Personal coach and may be working with National Team Coaches 	Coach if appropriate and desired Community Cycling Ongoing – trained
Performance Testing	<ul style="list-style-type: none"> • By end of stage, regular testing by coach (monthly-quarterly) • Video skill analysis • Power-Wingate test • Standard 25m, 50m times • Functional movement screen 	<ul style="list-style-type: none"> • Regular testing by coach (monthly-quarterly) • Power-Wingate test • Video skill analysis • Standard 25m, 50m times • Functional movement screen 	<ul style="list-style-type: none"> • Regular testing by coach (monthly-quarterly) • Power-Wingate test • Aerobic power • Video skill analysis • Standard 25m, 50m times • Functional movement screen 	<ul style="list-style-type: none"> • Regular testing by coach (monthly-quarterly) • Power-Wingate test • Aerobic power • Video skill analysis • Standard 25m, 50m times • Functional movement screen 	<ul style="list-style-type: none"> • None in this stage.

8 – Building Canadian BMX

Although BMX has been part of Canadian cycling for about 30 years, it is still relatively new compared to other cycling sports. Different provinces and territories have different availability of tracks and coaches, different levels of organization, and (of course) different climates and proximities to BMX racing in the USA. To create more opportunities for our racers we need to work together to build Canadian BMX. Cycling Canada, its partner provincial/territorial sport organizations (P/TSOs), coaches, organizers and parents all have key roles:

OBJECTIVE	RESPONSIBILITY
Develop a national framework for BMX development based on Canadian Sport for Life/Long Term Athlete Development	Cycling Canada
Develop and deliver coach and officials training programs	Cycling Canada, P/TSOs
Work to support the building and development of more quality BMX tracks and clubs	P/TSOs, Clubs
Create stage-appropriate development programs and competition schedules that support rider development.	Cycling Canada, P/TSOs, Clubs
Commit to ongoing personal and professional development, including NCCP certification, to provide the best quality of stage-appropriate development for athletes.	Coaches
Maintain a healthy perspective on competition and winning, remembering that we are working to build individual growth and development, long-term gains and success, and a love for all kinds of sport and physical activity.	Coaches, Parents
Ensure young BMXers get the best quality development by understanding Canadian Sport for Life principles and insisting on a NCCP-certified BMX coach.	Parents
Understand the importance of building skills in the “BMX for Fun and Skill” stages, and prioritize skill development ahead of winning for young BMXers.	All



PHOTO: ROB JONES

9 – From Winning BMX to Winning for Life

Providing the latest information on development, training and competition, like this guide, is part of Cycling Canada's commitment to growing the sport of BMX in Canada. Our goal is not simply to help Canadian BMXers onto international podiums, but to ensure that every athlete can enjoy participation in cycling and sport for a lifetime.

Our framework for growth is the Canadian Sport for Life movement. A key part of the movement is Long-Term Athlete Development, which is a comprehensive set of principles for effective participant development. LTAD is based on research combined with the practical experience of working with thousands of athletes and coach-instructors.

We believe:

- Life has different stages of development that include transitions from child to adolescent, to adult, and then to senior, resulting in changed capabilities.
- Training, competition and recovery programs should be based on participant capability rather than chronological age.
- For optimal development, sport and physical activity programs must be designed for the capability and gender of the participant.
- Physical literacy is the basis of life-long participation and excellence in sport and engagement in health enhancing physical activity.
- Every child has the potential to be an athlete; therefore, is genetically predisposed to be active if the environment encourages participation.
- Life-long participation and excellence in sport are best achieved by participating in a variety of sports at a young age to develop athleticism, then specializing in a particular sport later.

- There are sensitive periods during which there is accelerated adaptation to training during pre-puberty, puberty and early post-puberty.
- A variety of developmental, physical, mental, cognitive and emotional factors affect the planning of optimal training, competition and recovery programs.
- Providing guidance through the developmental stages of sport and physical activity will result in increased participation and performance across the lifespan.
- Mastery in sport develops over time, through participation in quality sport and physical activity programs.
- LTAD is participant/athlete centered, coach-led and organization-supported and, therefore, takes into account the demands of home, organized sport, community recreation and school.
- Quality sport and physical activity, combined with proper lifestyle, result in better health, disease prevention, enhanced learning, enjoyment and social interaction; leading to improved wellness.
- Sport practices, scientific knowledge and societal expectations are ever changing and, therefore, LTAD needs to continually adapt and improve.

We encourage you to support every athlete using these principles, whether their time in BMX leads them to the podium, to other cycling disciplines, to other sports, or to contributing to sport in other ways.

Let's go!



PHOTO: ROB JONES

Glossary of Terms

Adolescence is a difficult period to define in terms of the time of its onset and termination. During this period, most bodily systems become adult both structurally and functionally. Structurally, adolescence begins with an acceleration in the rate of growth in stature, which marks the onset of the adolescent growth spurt. The rate of growth reaches a peak, begins a slower or decelerative phase, and finally terminates with the attainment of adult stature. Functionally, adolescence is usually viewed in terms of sexual maturation, which begins with changes in the neuroendocrine system prior to overt physical changes and terminates with the attainment of mature reproductive function.

Aerobic Endurance- Ability to exercise for long durations using aerobic energy systems.

Agility- The ability to move quickly in three dimensions while remaining in control of the movement.

Anthropometry: Measurement of body lengths and girths. In early stages height and weight should be measured regularly to help in determining Peak Height Velocity (growth spurt). Later, body fat measurement should be added.

Balance- Ability to remain upright while moving. Includes static balance and balancing while moving or gliding.

Childhood ordinarily spans the end of infancy — the first birthday — to the start of adolescence and is characterized by relatively steady progress in growth and maturation and rapid progress in neuromuscular or motor development. It is often divided into early childhood, which includes pre-school children aged 1 to 5 years, and late childhood, which includes elementary school-age children, aged 6 through to the onset of adolescence.

Chronological age refers to “the number of years and days elapsed since birth.” Growth, development, and maturation operate in a time framework; that is, the child’s chronological age. Children of the same chronological age can differ by several years in their level of biological maturation. The integrated nature of growth and maturation is achieved by the interaction of genes, hormones, nutrients, and the physical and psychosocial environments in which the individual lives. This complex interaction regulates the child’s growth, neuromuscular maturation, sexual maturation, and general physical metamorphosis during the first 2 decades of life.

Coordination- Moving several parts of the body serially or simultaneously to achieve movement.

Critical periods of development refers to a point in the development of a specific behaviour when experience or training has an optimal effect on development. The same experience, introduced at an earlier or later time, has no effect on or retards later skill acquisition.

Community Initiation: A National Coaching Certification Program context describing coaches of entry-level pre-competitive athletes.

Development refers to “the interrelationship between growth and maturation in relation to the passage of time. The concept of development also includes the social, emotional, intellectual, and motor realms of the child.”

The terms “**growth**” and “**maturation**” are often used together and sometimes synonymously. However, each refers to specific biological activities. Growth refers to “observable, step-by-step, measurable changes in body size such as height, weight, and percentage of body fat.” Maturation refers to “qualitative system changes, both structural and functional in nature, in the organism’s progress toward maturity; for example, the change of cartilage to bone in the skeleton.”

Fine Motor Skills- Movements controlled by small muscles, e.g. hand or finger movements.

Functional Movement Screen- A test of core strength and balance while performing simple movements.

Goal Setting- The ability to set targets for future behaviours or outcomes.

Gross Motor Skills- Large movements of the limbs and body using multiple joints and muscle groups.

Introduction to Competition: A National Coaching Certification Program context describing coaches of early-stage competitive athletes.

Memory- Ability to retain and recall instructions, information, and experiences.

Mental Models- Ability to understand and manipulate mental models of real-world processes.



Cycling CANADA Cyclisme

Movement Literacy: The competence of an athlete in a wide range of physical activities; a foundation for all sport development.

National Coaching Certification Program (NCCP)- Canada's coach education program which prepares coaches in Community, Introduction to Competition, Competition Development and Competition High Performance contexts.

Periodization: A training program broken down into phases (periods) to promote progressive development.

Peak height velocity (PHV) is the maximum rate of growth in stature during growth spurt. The age of maximum velocity of growth is called the age at PHV.

Physical literacy refers to the mastering of fundamental motor skills and fundamental sport skills.

Puberty refers to the point at which an individual is sexually mature and able to reproduce.

Readiness refers to the child's level of growth, maturity, and development that enables him/her to perform tasks and meet demands through training and competition. Readiness and critical periods of trainability during growth and development of young athletes are also referred to as the correct time for the programming of certain stimuli to achieve optimum adaptation with regard to motor skills, muscular and/or aerobic power.

Skeletal age refers to the maturity of the skeleton determined by the degree of ossification of the bone structure. It is a measure of age that takes into consideration how far given bones have progressed toward maturity, not in size, but with respect to shape and position to one another.

Skill- The ability to perform complex movements with a high degree of precision and consistency. This includes both movement skills (agility, motion and object-control) and sport skills (reading and reacting to sport situations).

Speed 1- Speed increases due to improvements in neuromuscular coordination.

Speed 2- Speed increases due to improvements in energy systems, anaerobic alactic and lactic.

Strength 1- Strength increases due primarily to increases in neuromuscular coordination, not growth.

Strength 2- Strength increases due primarily to increases in lean muscle mass-hypertrophy.

Stamina- Also called "aerobic endurance" this is the ability to continue intense exercise for long periods.

Supercross Track- An expert-level BMX track with a higher start gate and bigger jumps, as used at the Olympics (for example).

Suppleness- Also called "Flexibility" this is the range of physical movement at the joints.

Talent ID: Talent identification tests used to direct athletes into activities based on their potential. Talent ID must NOT be used to compare athletes (e.g. for selection).

Trainability refers to the genetic endowment of athletes as they respond individually to specific stimuli and adapt to it accordingly. Malina and Bouchard (1991) defined trainability as "the responsiveness of developing individuals at different stages of growth and maturation to the training stimulus."

Wingate Test- A test of anaerobic power and capacity.



PHOTO: FGSC

Resources and Contacts

In addition to the resources and contacts listed here, useful information can be found at www.cyclingcanada.ca

Resources

Cycling Canada Long-Term Athlete Development, Volume 1. 2008. Cycling Canada, Ottawa, ON. ISBN 978-0-9809082-0-6

Canadian Sport for Life, 2005. Balyi, I., Cardinal, C., Higgs, C., Norris, S., and Way, R. Canadian Sport Centres, Vancouver, BC. ISBN 0-9738274-0-8

Additional information on Canadian Sport for Life and Long-Term Athlete Development can be found at www.canadiansportforlife.ca

Provincial Cycling Associations

Cycling British Columbia
#201-210 West Broadway
Vancouver, BC V5Y 3W2
Direct: 604 737-3164
www.cyclingbc.net

Alberta Bicycle Association
Percy Page Centre, 11759 Groat Road,
Edmonton, AB T5M 3K6
780 427-6352 (B)
www.albertabicycle.ab.ca

Saskatchewan Cycling Association
2205 Victoria Avenue,
Regina, Saskatchewan S4P 0S4
306 780-9299 (B)
www.saskcycling.ca

Manitoba Cycling Association
200 Main Street, Suite 309,
Winnipeg, Manitoba R3C 4M2
204 925-5686 (B)
www.cycling.mb.ca

Ontario Cycling Association
307-3 Concord Gate
Toronto, Ontario M3C 3N7
416 426-7243 (B)
www.ontariocycling.org

Fédération Québécoise des sports cyclistes
4545 Pierre de Coubertin
Montréal, Québec H1V 3R2
514 252-3071 (B)
www.fqsc.net

Vélo New Brunswick
P.O. Box 3145
Fredericton, New Brunswick E3A 5G9
506 877-7809 (B)
www.velo.nb.ca

Atlantic Cycling Center,
200 Prom. Du Parc,
Dieppe, NB E1A 7Z3
Contact: Luc Arseneau

Bicycle Nova Scotia
5516 Spring Garden Rd, 4th Floor,
Halifax, Nova Scotia B3J 1G6
902 425-5454 x 316 (B)
www.bicycle.ns.ca

Bicycle Newfoundland and Labrador
P.O. Box 2127, Station C,
St. John's, Newfoundland A1B 4R3
709 738-8889 (B)
www.bnl.nf.ca

Cycling Association of Yukon
9B Diamond Way,
Whitehorse, Yukon Y1A 6G4
867 667-8272 (B)

Cycling PEI
P.O. Box 302
Charlottetown, PEI C1A 7K7
1800 247-6712
www.sportpei.pe.ca



*Cycling***CANADA***Cyclisme*

203 - 2197 Riverside Drive
Ottawa, Ontario K1H 7X3

Tel: (613) 248-1353
Fax: (613) 248-9311

www.cyclingcanada.ca