



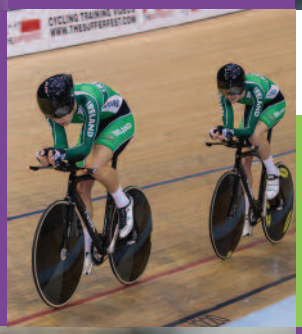

# CYCLING IRELAND

## Long Term Athlete Development

(Version 1)

cyclingireland


**Credits for Cycling Ireland Long Term Athlete Development**

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# INTRODUCTION

## What is the purpose of this document

The principle focus of this document is Long Term Athlete Development (LTAD), for cyclists. LTAD serves as a guide in order to safeguard and fully meet the developmental needs and abilities of every cyclist at each stage of LTAD.

This document outlines and sets the guiding principles for LTAD in keeping with Cycling Irelands (CI) vision and goals. The aim of the LTAD model is to allow CI realise these vision and goals with achievements at high performance and in cycling as a lifelong activity.

This LTAD model is a guide for everyone who is part of the CI community.

- **Cyclists** – LTAD will meet the developmental needs of the cyclist at any age and level of ability across all cycling disciplines. Ensure cycling coaching and programming is delivered to fully meet the needs of the cyclist at the required stage of LTAD.
- **Coaches** – use the principles of LTAD to guide the design and implement safe and effective coaching and training programmes.
- **Parents** – help parents to understand and support the principles of LTAD and recognise its significance in the cyclists overall growth and development. Parents can understand the rationale behind coaching decisions. Allow parents to be supportive of the cyclist during his/her development in training and competition.
- **Clubs** – CI provides programmes that support LTAD (Sprocket Rocket, Gearing Up, Bike for Life and Coach Education). Clubs can adhere to the principles of LTAD.
- **Commissions** – ensure that developmental programmes, competitive structures, events, etc. respect and support the principles of LTAD.
- **Officials, Leaders and Volunteers** - support and respect the principles of LTAD.
- **Developmental, Regional, National, International Squads** – work with competitive cyclists and coaches to develop achievers and high performers in cycling.

## What is Long Term Athlete Development

The Long Term Athlete Development (LTAD) model was developed in Canada by an expert group at the Canadian Sport Centres. LTAD was established to define a set of guiding principles for effective athlete development. The model is an athlete centred and coach driven model addressing the developmental needs of the athlete by considering both their biological and training age. Each stage in the model reflects a different stage in the athletes development and is based on the physical, emotional and cognitive capacities of each athlete. The LTAD principles are a guide for all sports in the development of training, competition and recovery programmes (Balyi, Way, Norris, Cardinal and Higgs, 2005).

The CI LTAD model serves to specifically address the optimal developmental needs of the cyclist in an Irish context. The CI LTAD model can guide all stages of the cyclists development taking into account the cyclists entry and early years in the sport, age, interests and abilities, across all cycling disciplines.

LTAD provides a structure for provincial and national programmes, for clubs and for coach education by ensuring that all cyclists are afforded the opportunity to reach their full potential and that Ireland continues to develop world class and Olympic cyclists.

## Factors influencing LTAD

**Fundamentals**

Fundamental movement skills or physical literacy prepares athletes to participate in almost any sport. In order to develop successful cyclists it is imperative that the fundamentals are encouraged and developed at the earliest stages of development when the cyclist is most receptive and has the ability to develop these skills easily and quickly. While you can always train the fundamental skills at any age the rate of development tends to decrease with age.

**Developmental Age**

The rate at which young cyclists develops is dependent on a number of factors. Physical, mental and emotional development can occur early or late in young cyclists. It is therefore important that the developmental age of the cyclist rather than chronological age is considered when devising training programs or activities to best suit the needs of the individual cyclist. The problem with chronological age is that is does not account for an individual's varying rate of physical maturity.

LTAD is based on the developmental age rather than chronological age. LTAD requires coaches, leaders and parents to recognise early, average and late developers in order to provide the best coaching, training and competition based on the ability and level of maturity of the individual cyclist.

**Peak Height Velocity (PHV)**

Peak Height Velocity (PHV) is directly linked to the developmental age of cyclists. PHV is very useful in order to determine a cyclists ability and readiness for physical training and to make developmentally appropriate decisions on the corresponding prescription of training loads (volume, intensity, time).

PHV is the period of growth and development where the cyclist is undergoing the most rapid period of change. Parents and coaches should pay attention to the cyclists growth rate. PHV can occur at about 12 years of age in girls and about 2 years later in boys. However, there can be much variation in PHV by the individual differences that exist.

In order to ensure that the prescription and emphasis of training is appropriate for each individual it is important that coaches and parents pay close attention to a cyclists PHV and stage of physical maturation (Triathlon Canada, 2007).

Prior to PHV, the primary focus for childhood sport should be on having fun, acquisition of the fundamental skills across a range of sports and also across a range of cycling disciplines. This will ensure that early specialisation of cyclists is avoided and ensure that a solid foundation is built prior to any increases in training volume and loads (Triathlon Canada, 2007).

It is important to also understand that during a period of rapid growth the cyclist will experience changes in bone, muscle and body composition. The arms and legs have a tendency to increase before the trunk. Therefore is it important to be aware that some previously learned skills may need to be re-learned by account of the cyclists changing body. The cyclist may be required to constantly change their bike setup and body position due to the physical adaptations that are occurring (Balyi et al., 2005).

**Training Age**

Cycling is a sport for everyone of any age and any ability. Although some cyclists may come to the sport at a slightly later age, it is important that they go through the same stages of development as someone who may have started slightly earlier.

Careful consideration however needs to be given to previous sporting activities and current competencies and abilities. This will help dictate how long an individual may spend learning the skills and competencies at each stage of development. A cyclist who demonstrates a clear understanding, well developed skills and competencies may spend much less time working through each stage as opposed to someone who demonstrates a much lesser degree of understanding and competency.

**Holistic Approach**

Physical, mental, motor and emotional traits develop at very varying rates. Therefore it is vital that coaches take into account the whole athlete and concentrate on their individual specific needs. A coach must be able to consider everything rather than focusing purely on the technical and physical components of training. Developing the whole athlete should be the primary objective of the coach and any training programme.

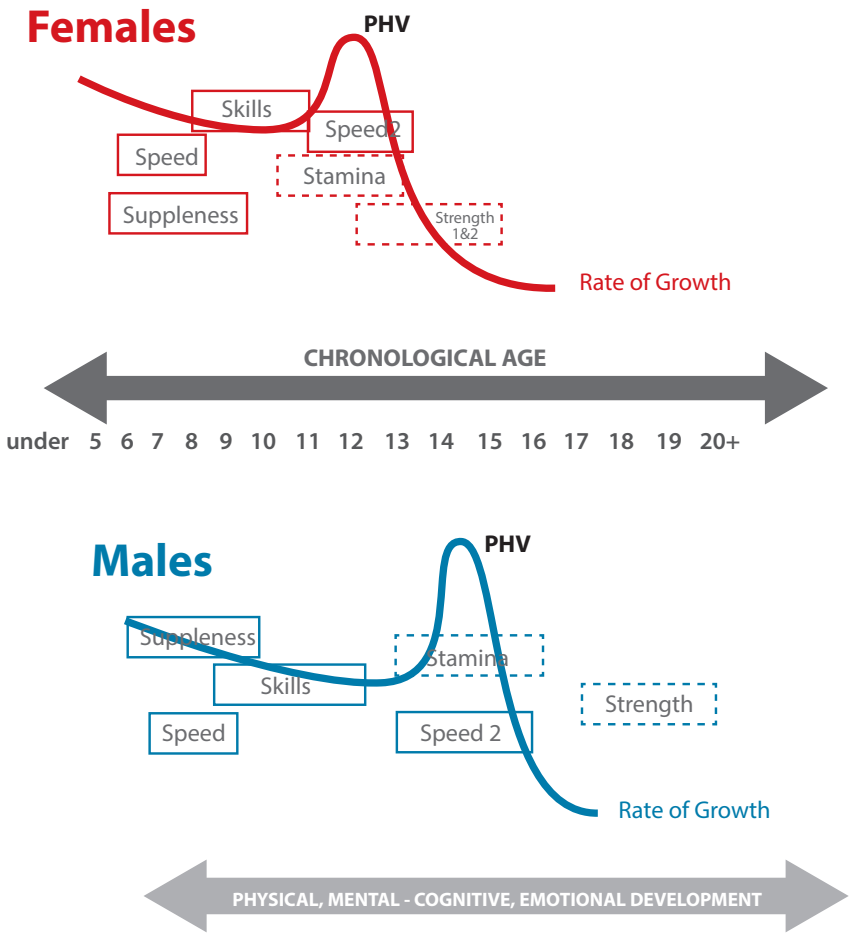
**Specialisation**

The foundation of any athlete is based on good physical literacy and sound basic skills. Promoting early or premature specialisation may prove detrimental to the cyclists overall development. Early specialization can lead to injury, burnout and finally early retirement from sport. Coaches should therefore encourage participation in multiple sports and activities, particularly in the early stages of LTAD.

**Trainability**

Trainability is the responsiveness of individuals to a training stimulus at different stages of growth and maturation. LTAD addresses these key periods in growth and development of young cyclists where training must be carefully planned to achieve optimal adaptations at each stage. Coaches must therefore be aware and recognise the optimal training windows for developing the essential components of fitness; Stamina, Strength, Speed, Skill and Suppleness (Flexibility) otherwise known as the Five S's. Stamina and strength is more closely aligned to developmental age whereas speed, skill and suppleness are more aligned to chronological age of the cyclist (Canadian Cycling Association, 2008).

Figure 1. Stages of Trainability (Balyi and Way, 2005)




**Periodisation**

Periodisation provides the structure for organising training, competition and recovery into a logical and scientifically based schedule to achieve optimal performance at a particular time period. Periodisation is a training programme based on volume, intensity and frequency of training over a short or long term time frame. The periodised plan should take into account growth, maturation and trainability principles.

**Competition Calendar Planning**

The type, frequency and level of competition will vary greatly at each stage of LTAD. At the early stages of development training and development are more important than competition. As too much competition or racing at the early stages can have a negative impact on the development of fundamental, basic skills and fitness. At the later stages of development competition becomes more important to ensure that the cyclist experiences a variety of competition and competitive environments. It is very important to select the right kind and level of competition and racing to meet the individual development needs of the cyclist.

**System Alignment and Integration**

Cyclists overall development and success is largely dictated by the ability of organisations, commissions and individuals involved in cycling working together in a fully integrated and coordinated way. The best results can only be achieved when all elements are working together.

## Lifelong Physical Activity

LTAD facilitates Lifelong Involvement in Sport and Physical Activity (LISPA). LTAD brings with it a number of social and health benefits. LTAD nurtures a positive attitude to sport and physical activity. Participants who follow the LTAD framework may also go on to become high performers. The development of physical literacy and movement skills is an essential component to achievements at high performance but also at competitive and recreational levels. The principle goal of LTAD is for participants to have a physically active life.

## Cycling Disciplines

Participation in a variety of cycling disciplines is very important to facilitate the development of an array of cycling skills and promotes choice for the cyclist. Therefore when a cyclist decides to focus on cycling as their main sport they should be encouraged to participate in multiple cycling disciplines (BMX, Cyclocross, Road, Trail, MTB) particularly in the earlier stages of LTAD.

Where possible coaches, clubs and parents should facilitate this multi discipline approach. This approach will lead to enhancements in physical, skill, technical and tactical development. Typically as the cyclist mature and progress through the stages of LTAD they will gravitate towards their preferred discipline (Canadian Cycling Association, 2008).

# Stages of Cycling LTAD

## 1 FUNDAMENTALS

**Training Age:** 0-3 years
**Age:** 7-9 years | 4-7 years (BMX only)
**Programmes:** Sprocket Rocket - Bike for Life - Club
**Type of Coach:**
- CI Foundation Coach
- CI Sprocket Rocket Coach
- CI Bike for Life Leader

## 2 INTRODUCTION TO TRAINING

**Training Age:** 1-4 years
**Age:** 10-12 years | 8-10 years (BMX only)
**Programmes:** Sprocket Rocket - Gearing-Up - Bike for Life - Club
**Type of Coach:**
- CI Foundation Coach
- CI Sprocket Rocket Coach
- CI Bike for Life Leader
- CI Gearing Up Coach
- CI Level 1 Coach
- CI Level 1 Discipline Specific Coach

## 3 TRAINING TO TRAIN

**Training Age:** 3-5 years
**Age:** 12-15 years | 11-14 years (BMX only)
**Programmes:** Gearing-Up - Bike fof ife - Club - Regional Progammes
**Type of Coach:**
- CI Gearing Up Coach
- CI Bike for Life Leader
- CI Level 1 Coach
- CI Level 1 Discipline Specific Coach
- CI Level 2 Coach

## 4 INTRODUCTION TO COMPETING & RACING

**Training Age:** 5-6 years
**Age:** 15-18 years
**Programmes:** Club - Regional Programmes - Provincial Squads - National Squads
**Type of Coach:**
- CI Level 1 Coach
- CI Gearing Up Coach
- CI Bike for Life Leader
- CI Level 1 Discipline Specific Coach
- CI Level 2 Coach

## 5 COMPETING TO SUCCEED

**Training Age:** 6+ years
**Age:** 18-23 years
**Programmes:** Regional - Provincial Squads
National Squads - High Performance Squads
**Type of Coach:**
- CI Level 1 Discipline Specific
- CI Level 2 Coach
- CI Level 3 Coach

## 6 COMPETING TO WIN

**Training Age:** 8+ years
**Age:** 23+ years
**Programmes:** National Squads
High Performance Squads
**Type of Coach:**
- CI Level 2 Coach
- CI Level 3 Coach

## 7 SUSTAINING PARTICIPATION

**Training Age:** At any stage
**Age:** 36+ years, but can be any age over 18
**Programmes:** Gearing-Up - Bike for Life - Clubs - Regional
**Type of Coach:**
- CI Foundation Coach
- CI Gearing Up Coach
- CI Bike for Life Leader
- CI Level 1 Coach
- CI Level 1 Discipline Specific Coach

# STAGE 1 FUNdamentals

| | |
|---|---|
| **TRAINING AGE:** | 0 to 3 years |
| **AGE:** | 7 to 9 years \| 4 to 7 years (BMX only) |
| **CYCLING IRELAND PROGRAMMES:** | Sprocket Rocket Coach - Bike for Life - Club |
| **TYPE OF COACH:** | CI Foundation Coach<br>CI Sprocket Rocket Coach<br>CI Bike for Life Leader |

## Outcomes:
- Develop physical literacy and movement skills through multiple sports and activities.
- Develop physical capacities (aerobic capacity and speed).
- Develop basic cycling skills (Sprocket Rocket).
- Develop awareness of safety in sport and safe road cycling.
- Develop fundamental social skills.
- Develop positive attitude to sport.
- Develop components through fun games and activities.

## What does not belong:
- Excessive amount of exercise for conditioning.
- Testing that encourages comparisons with others.
- Emphasis and focus on early developer and the most skilled cyclists.

## Role of Parents:
- Involve the child in wide range of activities and sports that promotes fundamental movement and motor skills.
- Show an interest and be supportive of the child, encouraging involvement in sport and physical activity.

## Physical Development:
- Develop basic components of fitness (aerobic capacity and speed).
- Develop components of fitness through fun games and activities.
- Develop ABC's (agility, balance and co-ordination) through fun games and activities.
- Learn the basics of warming up and cooling down.

## Skill Development:
- Develop an awareness of bike safety and safe road cycling.
- Develop basic cycling skills (Sprocket Rocket and Bike for Life).
- Introduce bike position and safe set up.
- Learn about appropriate equipment and clothing.
- Learn how to do a one minute bike check (M Check).
- Develop BMX cycling skills.
- Introduction to BMX racing skills.
- Introduction to basic BMX tactics.

## Social and Psychological:
- Manage expectations both that of Rider, Coach and Parent.
- Participate in multiple sports and multiple cycling disciplines.
- Develop positive interaction and socialisation with other participants and peers.
- Acknowledge participation and effort as distinct from success.

## Other
- Learn the basics of hydration, rest and recovery.

## Amount of Time:


- Up to 4 hours per week.
- Cycling training 2 to 3 times per week, along with participation in other sports up to 3 times per week.
- Session length 30 minutes – 1 hour maximum.
- Games with a lot of breaks.
- Participate in multiple cycling disciplines.
- Participate in up to 3 other sports.
- No periodisation.

## Amount of Time (BMX only):
- 3 sessions per week
- Session length: 1-1.25 hours max.

## Events and Activities:
- Limited competition, focus on skills development.
- Fun participatory events.
- Multi-sport camps.

## Competition Structure (BMX only):
- BMX Racing
- BMX National Series

# STAGE 2 Introdution to Training

| | |
|---|---|
| **TRAINING AGE:** | 1 to 4 years |
| **AGE:** | 10 to 12 years \| 8 to 10 years (BMX only) |
| **CYCLING IRELAND PROGRAMMES:** | Sprocket Rocket - Gearing Up (Off Road, Road & Track) - Bike for Life - Club |
| **TYPE OF COACH:** | CI Foundation Coach<br>CI Sprocket Rocket Coach<br>CI Gearing Up Coach<br>CI Bike for Life Leader<br>CI Level 1 Coach<br>CI Level 1 Discipline Specific Coach |

## Outcomes:
- Demonstrable proficiency of fundamental movement and motor skills.
- Continue to develop physical capacities (aerobic capacity and speed).
- Refine basic cycling skills (Sprocket Rocket and Bike for Life).
- Develop more advanced skills (Gearing Up Off Road, Gearing Up Road, Gearing Up Track and Bike for Life).
- Develop basic cognitive skills (concentration, problem solving, communication and decision making).

## What does not belong:
- Over training and under recovery due to excessive training hours.
- Testing that encourages comparison with others.

## Role of Parents:
- Continue to involve the child in wide range of activities and sports.
- Maintain a positive balance with school and sporting activities.

## Physical Development:
- Continue to develop components of fitness (aerobic capacity and speed).
- Develop additional components of fitness (muscular strength, muscular endurance, and flexibility).
- Develop core stability through FUN games, swiss ball and own body weight exercises.
- Develop the 5 S's leg speed, leg and back strength, stamina, suppleness and skill.
- Continue to develop the warm up and cool down.
- Introduce stretching and flexibility techniques.
- Variety and balance in training to ensure that the same muscle/tendon groups are not loaded in training on consecutive days.

## Skill Development:
- Refine basic cycling skills (Sprocket Rocket and Bike for Life).
- Develop more advanced skills (Gearing Up Off Road, Gearing Up Road, Gearing Up Track and Bike for Life).
- Learn about restricted gearing.
- Learn the basics of bike set up (frame size and saddle height).
- Learn the basics of bike maintenance (puncture repair and cleaning).
- Introduction to bike spins leisure/recreational both on and off road.
- Introduce the concept of cycle racing skills for BMX, MBT, Road, TT and Track (See Appendix 4 to 7).

## Social and Psychological:
- Participation in multi sports activities and multiple cycling disciplines.
- Acknowledge participation and effort as distinct from success.
- Introduce working as part of a team.

## Other:
- Develop nutrition, hydration and rest and recovery strategies.

## Amount of Time:


- Up to 4 - 5 hours per week
- Up to 4 sessions per week
- No more than 2 consecutive days
- Maximum training distance per session:
  - 10yrs: 20km
  - 11yrs: 30km
  - 12yrs: 50km
- Session length 1.5 hours max
- Participate in multiple cycling disciplines
- Participate in up to 3 other sports
- Single periodisation

## Amount of Time (BMX only):
- 4 sessions per week + 1 session off the track
- Session length: 1-1.5 hours max.

## Events and Activities:
- Limited competition, focus on skills development.
- Fun participatory events.
- Cycling Youth Camps.

## Competition Structure (BMX only):
- BMX Racing
- BMX World Championships
- BMX National Series
- BMX European Championships

# STAGE 3 Training to Train

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|---|---|
| **TRAINING AGE:** | 3 to 5 years |
| **AGE:** | 12 to 15 years \| 11 to 14 years (BMX only) |
| **CYCLING IRELAND PROGRAMMES:** | Gearing Up - Bike for Life - Clubs - Regional programmes |
| **TYPE OF COACH:** | CI Gearing Up Coach<br>CI Bike for Life Leader<br>CI Level 1 Coach<br>CI Level 1 Discipline Specific Coach<br>CI Level 2 Coach |

## Outcomes:

- Demonstrable proficiency of basic and more advanced cycling skills.
- Develop advanced cycling skills (Gearing Up Off-Road, Gearing Up Road, Gearing Up Track and Bike for Life).
- Introduce the concept of training and preparation to accompany skill training.
- Monitor training to ensure injury prevention and management as intensity and volume of training increases.
- Refine basic cognitive skills (concentration, problem solving, communication and decision making).
- Demonstrable desire to be active, dedicated and a committed to training.

## What does not belong:

- Coaching and exercise prescription that does not take into account the developmental needs of the cyclist.
- Excessive training demands that places too much stress on the cyclist.
- Over training and under recovery due to excessive training hours.

## Role of Parents:

- Parental involvement increases as the child's interest in the sport develops.
- Increased interaction and communication with child and coach.
- Continue to maintain a positive balance with school and sporting activities.
- Help identify sporting preferences.
- Ensure that the child is well nourished and rested.

## Physical Development:

- Continue to develop components of fitness (aerobic capacity and speed, muscular strength, muscular endurance and flexibility).
- Continue to develop core strength and stability with swiss ball and own body weight exercises.
- Introduction to weight training where PHV has been reached.
- Continue to develop the 5 S's leg speed, leg and back strength, stamina, suppleness and skill.
- Develop participant specific warm up and cool down.
- Continue to develop participant specific stretching and flexibility programme based on the individual needs of the cyclist.

## Skill Development:

- Demonstrable mastery of basic skills (Sprocket Rocket and Bike for Life).
- Refine advanced skills (Gearing Up Off Road, Gearing Up Road, Gearing Up Track and Bike for Life).
- Develop more advanced discipline specific cycling skills (See Appendix 4 to 7).
- Develop discipline specific racing skills (See Appendix 4 to 7).
- Introduce racing tactics for each discipline.
- Introduction to cycling racing.
- Develop bike maintenance skills.

## Social and Psychological:

- Introduce basics of recording training.

## Other:

- Refine nutrition, hydration and rest and recovery strategies.
- Introduce training cycles tapering, peaking and recovery.

## Amount of Time:

- Up to 6 - 8 hours per week
- Up to 5 - 6 sessions per week
- No more than 3 consecutive days
- Session length up to 2 hours, average 1 - 1.5 hours
- Maximum training distance per session:
  - 13yrs: 70km
  - 14yrs: 85km
  - 15yrs: 90 - 100km
- Participate in multiple cycling disciplines
- Participate in up to 2 other sports
- Multiple Periodisation

### Amount of Time (BMX only):

- 4-5 sessions per week + 2 sessions off the track
- Session length: up to 1.75 hours max.

## Events and Activities:

- Youth Road, Track and Off Road Development Camps
- Inter Provincial Championships
- Youth Road, Track and Off Road Events
- Youth Championships

## Competition Structure (BMX only):

- BMX Racing
- BMX National Series
- BMX World Championships
- BMX European Championships

# STAGE 4 Introduction to Competing & Racing

| | |
|---|---|
| **TRAINING AGE:** | 5 - 6 years |
| **AGE:** | 15 to 18 years |
| **CYCLING IRELAND PROGRAMMES:** | Club - Regional - Provincial Squads - National Squads |
| **TYPE OF COACH:** | CI Gearing Up Coach<br>CI Bike for Life Leader<br>CI Level 1 Coach<br>CI Level 1 Discipline Specific Coach<br>CI Level 2 Coach |

## Outcomes:

- Incorporate endurance, speed and strength training as part of overall training programme.
- Develop anaerobic capacity.
- Develop strategies for stress management, life balance, competition and performance.
- Cyclist gains more independence in decision making.
- Devote more time and effort to cycling whilst decreasing the amount of time devoted to other sports.
- Educate on anti doping rules and regulations.

## What does not belong:

- Coaching and exercise prescription that does not take into account the developmental needs of the cyclist.
- Excessive training demands that places too much stress on the cyclist.
- Over training and under recovery due to excessive training hours.
- Over emphasis on competition.
- Use of supplements.

## Role of Parents:

- Parental involvement decreases but still provide positive support for the cyclist.
- Continue to maintain a positive balance with school and other aspects of the cyclists life.

## Physical Development:

- Continue to develop components of fitness (aerobic, muscular strength, muscular endurance, flexibility and body composition) based in the individual needs of the cyclist.
- Develop anaerobic capacity and power, gradually and based on individual stage of development of the cyclist.
- Continue to develop core strength and stability with swiss ball and own body weight.
- Continue to develop the 5 S's leg speed, leg and back strength, stamina, suppleness and skill.
- Introduction to plyometrics and free weights.
- Continue to develop participant specific warm up and cool down.
- Continue to develop participant specific stretching and flexibility program based on the individual needs of the cyclist.

## Skill Development:

- Demonstrable mastery of advanced cycling skills (Gearing Up Off Road, Gearing Up Road, Gearing Up Track and Bike for Life).
- Refine more advanced discipline specific cycling skills (See Appendix 4 to 7).
- Experiment with different discipline specific racing techniques (See Appendix 4 to 7).
- Individualisation of skills, training to develop strengths and weaknesses of the individual cyclist.
- Demonstrable ability to service own bike.
- Further develop competition skills and test various strategies.
- Develop team/discipline tactics (See Appendix 4 to 7).

## Social and Psychological:

- Develop training logbook and detail of information recorded.
- Develop ability to reflect on their own training and competition.
- Introduce goal setting, short and medium term.
- Introduce concept of imagery and competitive arousal.
- Cyclist begins to specialise in a couple of different disciplines.

## Other:

- Demonstrable ability to look after their individual nutritional and recovery needs.
- Develop training cycles tapering, peaking and recovery.

## Amount of Time:

- Up to 15 hrs per week
- Up to 7 - 8 sessions per week, no more than 4 consecutive days
- Session length up to 4 hours, average 2 hours
- Participate in up to 3 cycling disciplines
- Participate in up to 2 other sports
- Multiple Periodisation

## Amount of Time (BMX only):

- 4-5 sessions per week + 2-3 off track
- Session length: 2 hours max.

## Events and Activities:

- Youth Road, Track and Off Road Development Camps
- Youth Road, Track and Off Road Events
- Youth Tour
- Youth Championships
- Inter Provincial Championships
- European Championships
- World Championships
- Youth Olympics

# STAGE 5 Competing to Succeed

| | |
|---|---|
| **TRAINING AGE:** | 6+ years |
| **AGE:** | 18 to 23 years |
| **CYCLING IRELAND PROGRAMMES:** | Regional - Provincial - National Squads - High Performance Squads |
| **TYPE OF COACH:** | CI Level 1 Discipline Specific Coach<br>CI Level 2 Coach<br>CI Level 3 Coach<br>HP Coach Support Programme (Starter) |

## Outcomes:

- Complete mastery of cycling specific skills performed at speed, under fatigue and under pressure consistently.
- Cyclist should have extensive knowledge of competition environment, rules and regulations.
- Fully developed mental preparation skills for competition.
- Educate on anti doping rules and regulations.
- Progress through levels of competition from local, regional, national and international.
- Specialisation towards the best discipline/event for each individual.

## What does not belong:

- Over training and under recovery due to excessive training hours training and/or excessive training loads.
- Use of supplements.

## Role of Parents:

- Parental involvement decreases but continues to provide positive support for the cyclist.

## Physical Development:

- Maximise aerobic and anaerobic capacity.
- Develop strength and conditioning, individually tailored discipline specific routine.
- Develop cyclist specific core routine.
- Develop sport specific strength and maximum power.
- Discipline specific warm up and cool down.
- Continue to develop participant specific stretching and flexibility techniques.
- Aerobic power, develop pre-season and maintain during season.
- Anaerobic power, periodised development.
- Regular testing to monitor physical condition, sports science testing.

## Skill Development:

- Complete refinement of cycling specific skills – correct weakness and focus on strengths.
- Instinctively perform previously learned and developed technical skills to a high performance in competition for specific disciplines.
- Apply individually developed techniques.
- Instinctively apply previously learned and developed tactics to a high performance in competition for specific disciplines.
- Apply tactics as part of an overall race strategy.
- Apply individual strengths to suit team tactics.

## Social and Psychological:

- Continue to keep training logbook.
- Follow personalised programme based on the specific needs of the cyclist.
- Perfect performance and pre-competition mental routines.
- Fully developed ability to reflect on own training and competition.
- Career planning/education.
- Travel strategies.

## Other:

- Complete refinement of lifestyle habits; nutrition, recovery, tapering, peaking and weight management.
- Source support systems, carding, funding, club and sponsorship.
- Balanced lifestyle..

## Amount of Time:

- Full Time Rider: 20+ hours per week up to 5hr training days
- Part Time Rider: Average 13hrs weekly with possibilities for some 20hr weeks, 4hrs training days
- Compete in up to 3 disciplines
- Participate in up to 2 other sports, 1 preferably
- Multiple periodisation, multiple competition peaks

## Amount of Time (BMX only):

- 5 sessions per week + 4-5 off track
- 2 hours max.

## Events and Activities:

- Training and Preparation Camps
- Selection Events
- Provincial and National Championships
- European Championships
- Under 23 Continental/World Championships

# STAGE 6 Competing to Win

| | |
|---|---|
| **TRAINING AGE:** | 8+ years |
| **AGE:** | 23+ years |
| **CYCLING IRELAND PROGRAMMES:** | National Squads - High Performance Squad |
| **TYPE OF COACH:** | CI Level 2 Coach<br>CI Level 3 Coach<br>HP Coach Support Programme (Starter) |

## Outcomes:

- Fully developed cycling specific skills performed at spped, fatigue and under pressure consistently in competition conditions.
- Compete and achieve highest level of performance at national and international competition.
- Achieve and maintain physical attributes: endurance, speed, strength, power and flexibility to the highest level.
- Fully developed recovery strategies.
- Fully developed mental preparation skills for competition.
- Take stronger role in decision making process, working in partnership with coach and others.
- Accepts consequences of own behaviour.
- Capable of managing interview and media events.
- Fully aware of Anti-Doping rules, regulations & testing procedures.
- Preparation for retirement and transition from cycling that can include career or educational options.

## What does not beling:

- Use of performing enhancing drugs.

## Role of Parents:

- Continue to provide positive support for the cyclist.

## Physical Development:

- Maximise aerobic and anaerobic capacity.
- Develop strength and conditioning, individually tailored discipline specific routine.
- Develop cyclist specific core routine.
- Develop sport specific strength and maximum power.
- Discipline specific warm up and cool down.
- Continue to develop participant specific stretching and flexibility techniques.
- Aerobic power, develop pre-season and maintain during season.
- Anaerobic power, periodised development.
- Regular testing to monitor physical condition, sports science testing.

## Skill Development:

- Full individualisation of technical and tactical skills.
- Perform technical skills as required under specific competitive conditions.
- Develop team tactics.
- Fully develop competition skills and test various strategies.
- Implement discipline specific tactics in competitive setting, team tactics, leading out, competitor and course based actions, optimum energy spend and bluffing.

## Social and Psychological:

- Fully developed lifestyle habits; nutrition, hydration, recovery, tapering, peaking and weight management.
- Professional long term goal setting.
- Media training.
- Career/education planning.

## Amount of Time:

- Up to 22+ hours per week
- Up to 12 sessions per week
- Session length 4hrs+, average 2 - 3 hours
- Compete in up to 2 cycling disciplines
- Participate in 1 sport only
- Multiple periodisation, multiple competition peaks

## Amount of Time (BMX only):

- 5 sessions per week + 4-5 off track
- Session length: 2 hours max

## Events and Activities:

- Selection Events
- Training and Preparation Camps
- Provincial and National Championships
- UCI Tour Events
- World Championships
- World Cup Events
- Olympic Games

# STAGE 7 Sustaining Participation

| | |
|---|---|
| **TRAINING AGE:** | At any stage |
| **AGE:** | +36 years but can be at any age (over 18) |
| **CYCLING IRELAND PROGRAMMES:** | Gearing Up - Bike for Life - Clubs |
| **TYPE OF COACH:** | CI Foundation Coach<br>CI Gearing Up Coach<br>CI Bike for Life Leader<br>CI Level 1 Coach<br>CI Level 1 Discipline Specific Coach<br>CI Level 2 Coach |

## Outcomes:

- Application of learned skills to new focus.
- Develop additional skills e.g. coaching, administration, event organisation, etc.
- Desire to remain active and involved in regular physical activity, and to give back to cycling.
- Social participation in cycling activity.
- Volunteer work, commissions, clubs, development and NGB.

## What does not belong:

- Be aware of physical limitations.

## Physical Development:

- Continue to maintain age appropriate components of fitness (aerobic, muscular strength, muscular endurance, flexibility and body composition).
- Develop anaerobic capacity.
- Develop specific warm up and cool down.
- Develop participant specific stretching and flexibility techniques.

## Skill Development:

- Refine technical skills and knowledge.
- Refine tactical skills and test various strategies in competition and leisure cycling.
- Further develop knowledge and learning skills on bike maintenance and innovations in order for this knowledge to be passed on.
- Pass on technical and tactical knowledge through coaching.
- Demonstrate leadership.

## Social and Psychological:

- Optimise lifestyle habits, nutrition, hydration, recovery, tapering, peaking and weight management.
- Adaptation to non competitive lifestyle, training and outlook.
- Pursue personal and family goals more strongly.
- Further education and career development.
- Set goals according to activity, leisure cycling, competition, coaching and further education.

## Amount of Time:

- Up to 14 hours per week
- Up to 7 sessions per week
- Session length up to 4 hours, average 2 hours
- Compete in up to 2 or 3 disciplines
- Participate in up to 2 sports
- Multiple periodisation, multiple competition peaks

## Events and Activities:

- Training Camps
- Sportive and Leisure Events
- Club, Provincial and National Competitions
- Vets Competitions

# APPENDIX 1

## Summary of Physical, Cognitive and Emotional Characteristics for different stages of development

**(Taken and modified from Balyi et al., 2005)**

| CHILDHOOD | | |
|---|---|---|
| | **Capacities & Characteristics** | **Implications for the Coach** |
| PHYSICAL DEVELOPMENT | Aerobic capacity is sufficient to meet the demands of most activities. | Child has the capacity to keep going. Develop through FUN games and activities. |
| | Aerobic capacity of child differs greatly to that of an older child. | Younger children may have difficulty staying with or keeping up with older children. |
| | Anaerobic system is not fully developed, therefore has limited ability to work anaerobically. | Organise short duration high intensity activities. Develop through FUN games and activities. |
| | Large muscle groups are more developed than smaller ones. More skilful in movements requiring the use of large muscle groups. | Develop motor skills through FUN games and activities requiring the use of large muscle groups. Gradually introduce more specific, co-ordinated movements requiring the use of smaller muscle groups. |
| | More sensitive to exercise in particularly high and low temperatures. | Take longer to warm up in cold weather. Be vigilant for signs of distress. Ensure plenty of fluids are taken on board in when exercising in high temperatures. |
| | Motor patterns, agility, balance, co-ordination and flexibility become more developed from early to late childhood. | Encourage sports and activities that encourage a large degree of motor and co-ordination skills. Provide continual and progressive skill development. |
| | Muscular strength naturally becomes more developed from early to late childhood. | Develop through FUN games and activities. |
| MENTAL DEVELOPMENT | Children have limited attention span. Difficulties staying still or listening for prolonged periods of time. | Give short and precise instructions. Ensure that activities are simple, FUN and well planned. |
| | Children learn through experience. Therefore children tend to learn by trial and error and repetition. | Make sure demonstrations of basic skills are performed correctly. Coach must be able to assess basic skills and provide a wide range of opportunities to develop technical and tactic skills. |
| | Children realise their preferred style of learning. Generally verbal, visual and practical. Most children prefer to learn by doing. | Use a number of different coaching styles to suit the different learning styles. |
| | Childs imagination becomes more developed from early to late childhood. | Encourage individuality and creativity. Allow children to play and experiment. |
| | Childs language skills become more developed from early to late childhood. | Use terminology that is easily understood. Gradually introduce more technical terminology. |

| | Capacities & Characteristics | Implications for the Coach |
|---|---|---|
| EMOTINOAL DEVELOPMENT | Children like to be the centre of focus and attention. | Plan activities that guarantee success. Allow children to show their skill. Move from simple skills and tasks to more complex skills and tasks. |
| | Children are continually developing their self esteem. They tend to view their performance in black and white (good or bad). | Always provide positive reinforcement to build self esteem. |
| | Children like routine, repetition and structure to training. | Introduce change gradually. Be consistent in your coaching style. |
| | Children begin to understand rules and regulations. | Introduce simple games with simple rules. |

## EARLY ADOLESCENCE

| | Capacities & Characteristics | Implications for the Coach |
|---|---|---|
| PHYSICAL DEVELOPMENT | Changes occur in bone, muscle and body composition. Arm and leg length tend to increase before the trunk. | Cyclist become aware of their changing body. Learned skills may need to be re-learned. Cyclists may need to constantly change their positions and bike set up due to changes and physical adaptations that are occurring. |
| | Decreases in flexibility, due to growth spurts. Girls begin their growth spurt between 10-14yrs and boys between 12-15yrs of age. | Pay attention to stretching and flexibility techniques. |
| | Decreases in flexibility make the cyclist more susceptible to injuries. | Vary the type of activities to avoid overuse injuries. |
| | Substantial variations in size and height of cyclists of the same age. | Groupings and classifications based on chronological age may not be appropriate. |
| | Aerobic capacity is more advanced due to adaptations in the oxygen carrying capacity of blood cells. | Aerobic training can be introduced to encourage greater adaptations of aerobic system. Short duration anaerobic training is introduced. |
| | Agility, balance and co-ordination is fully developed and trainable. | Focus on refining and mastering technical skills. |
| MENTAL DEVELOPMENT | Greater ability to make decisions. Cyclist should be more responsible for their own decisions. | Encourage activities that include decision making strategies. |
| | Strong fear of failure | Plan activities for success and not necessarily based on winning. Introduce strategies to cope with success and failure. |
| | Perfect learned skills. Learning should be based on the needs of the individual. | Cyclists develop at different rates. Make sure you include all cyclists irrespective of how good they are. Some cyclists will be early developers whilst others will develop later. Do not exclude late developers, they may prove to be more successful long term. |

| | Capacities & Characteristics | Implications for the Coach |
|---|---|---|
| EMOTINOAL DEVELOPMENT | Physical, mental and emotional maturity will vary greatly and develops at very different rates.<br><br>Hormonal levels increases, leading to mood swings and behavioural changes.<br><br>Influenced by peers, trends and role models | Cyclist may develop confusion and anxiety. Develop communication skills and understanding. Cyclists may need some help to cope with physical and emotional changes.<br><br>Do not let changes be an excuse for negative behaviour.<br><br>Cyclists participation may be influenced by a number of outside influences. Be supportive and provide guidance. |

## LATE ADOLESCENCE

| | Capacities & Characteristics | Implications for the Coach |
|---|---|---|
| PHYSICAL DEVELOPMENT | Circulatory and respiratory systems is fully developed.<br><br>Muscular development in size is fully developed, but increases in strength can continue into their 20's.<br><br>Body composition changes. Females may be prone to putting on weight.<br><br>Rate of skill development decreases. | Aerobic and Anaerobic systems can be trained. Considerations should be given to the sport specific training based on individuals sport and specialist discipline.<br><br>Introduce strength training to encourage greater adaptations in muscular strength.<br><br>Develop aerobic training. Develop mechanisms to deal with weight gain and develop awareness amongst cyclists themselves.<br><br>Improvement in motor ability will be slower in late adolescence then in childhood and early adolescence. Improvements in skill can still be obtained but at a slower rate. |
| MENTAL DEVELOPMENT | Cyclist have greater ability to understand the technical requirements of the sport.<br><br>Cyclist begin to make decisions about their own training and development.<br><br>Cyclist has the ability to understand rules and regulations. | Make sure Cyclists understands why they are doing certain things. Coaches should ensure refinement of technical and tactical skills.<br><br>Let the cyclist think for themselves. Reduce the amount of feedback that the coach gives, use . questioning.<br><br>Introduce clear and well defined rules and regulations. Make sure you are seen to be fair. |
| EMOTINOAL DEVELOPMENT | Additional factors and considerations have to be weighed up which may impact on time and ability to train. Study, work and peer pressures need to be balanced.<br><br>Cyclist needs to be thought of and viewed as an adult. | Be aware and recognise these additional factors (other sports, sports teams, school activities). Be supportive of decisions made.<br><br>Treat cyclists as adults. Work closely with them to establish goals. |

| EARLY ADULTHOOD | | |
|---|---|---|
| | **Capacities & Characteristics** | **Implications for the Coach** |
| PHYSICAL DEVELOPMENT | Body has reached maturity. All physiological systems can be trained.<br><br>Skeletal system reaches maturity in females at 19-20yrs and in males around 22-25yrs | Devise training programs to provide maximum adaptations. Employ advanced training methods and programs to ensure maximal training adaptations. Coaches should incorporate the latest sport science and medical information. Appropriate testing and monitoring should also be included. Signs of overtraining and stress should be closely monitored.<br><br>Coaches should ensure that all muscle groups are well balanced. |
| MENTAL DEVELOPMENT | Brain matures about 19-20yrs of age. Cyclist is capable of self reflection, correcting and refining skills.<br><br>Complete understanding of rules, regulations and structures. | Coaches relationship changes where cyclist and coach work together to encourage high levels of performance. Develop a winning attitude.<br><br>Principles of adult learning should be used. Cyclist themselves should be involved in the decision making process and in planning activities and events. |
| EMOTIONAL DEVELOPMENT | Cyclist is responsible and accepts consequences of own action.<br><br>Decisions on career, education and lifestyle becomes a priority. | Encourage goal setting to provide direction and purpose to cyclists overall program.<br><br>Provide guidance and support for cyclist and the decisions they make. |

# APPENDIX 2

## Critical Periods of Development

The chart below is adapted from Biathlon Canada LTADM (2006) demonstrates the window of optimum trainability for physical and mental components ranging from 1= limited trainability to 4 = maximum trainability for each skill and ability irrespective of the sport.

| LTAD Stage | Active Start | Funda-mentals | Introuction to Training | Training to Train | Introduction to Competing and Racing | Competing to Succeed | Competing to Win | Sustaining Participation |
|---|---|---|---|---|---|---|---|---|
| Approximate Developmental Stage | Early Child | Mid Child | Late Child | Early Puberty | Mid Puberty | Late Puberty | Early Adult | Adult |
| Goal Setting | | | | | 2 | 3 | 4 | 3 |
| Strength 2 | | | | | 2 | 3 | 4 | 3 |
| Speed 2 | | | | | 2 | 3 | 4 | 2 |
| Abstract Thinking | | | | | 3 | 4 | 3 | 2 |
| Aerobic Endurance | | 2 | 3 | 4 | 4 | 3 | 2 | 1 |
| Mental Models | | 1 | 3 | 4 | 3 | 2 | 2 | 1 |
| Speed 1 | 1 | 2 | 3 | 4 | 2 | 1 | 1 | 1 |
| Strength 1 | 1 | 2 | 3 | 4 | 3 | 2 | 1 | 1 |
| Fine Motor Skills | 1 | 2 | 3 | 4 | 2 | 1 | 1 | 1 |
| Aiming & Hitting | 1 | 2 | 3 | 4 | 3 | 2 | 1 | 1 |
| Visual Acuity | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 1 |
| Memory | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 |
| Coordination | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 |
| Balance | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 |
| Agility | 2 | 3 | 4 | 3 | 2 | 1 | 1 | 1 |
| Skills | 4 | 4 | 3 | 3 | 2 | 2 | 1 | 1 |

Critical periods of development across LTAD stages -
Adapted from Biathlon Canada LTADM (2006)

# APPENDIX 3
# PERFORMANCE PRACTICE MODEL

Learning, practicing and mastering the basic skills of cycling is one of the foundations of coaching, sports performance and athletic training. Just learning the skill is only the first step in the process, there are 7 Steps you must master in sport to be successful (Wayne Goldsmith, 2013).

## Seven steps for Mastering a Skill

| | SKILL STEP | CRITICAL COACHING QUESTION | LEARNING DRIVER | COACH'S FOCUS | ATHLETE'S LEVEL OF UNDERSTANDING | PRACTICE EXPERIENCES |
|---|---|---|---|---|---|---|
| | 7 Perform very well, at speed, under fatigue and under pressure consistently in competition conditions | Can the athlete apply the skill in competition to meet the demands of every competition situation they face? | Athlete driven | Under-standing | Why to do it<br>When to do it<br>When NOT to do it | Problem solving and decision making |
| 3 | 6 Perform very well, at speed, under fatigue and under pressure consistently | Can the athlete perform the skill in training practices which simulate competition conditions? | Coach and athlete working together in a learning partner-ship | Experi-encing | How to do it | T.U.F. TRAINING (Technique Under Fatigue) PERFORM-ANCE PRACTICE VARIATIONS, e.g. progressive introduction of speed, fatigue, pressure and measureable training goals/ targets to skills practices. |
| | 5 Perform very well, at speed, under fatigue and under pressure | | | | | |
| 2 | 4 Perform very well, at speed and under fatigue | | | | | |
| | 3 Perform very well, at speed | | | | | |
| 1 | 2 Perform very well | Can the athlete perform the skill? | Coach driven | Instructing | What to do | Observation, demonstration, instruction |
| | 1 Perform | | | | | |

Model of the Seven Skills Steps in Performance Practice

# APPENDIX 4

## BMX SKILLS AND TACTICS MATRIX

The chart below demonstrates the window of optimum trainability for technical and tactical components where:

| 1 = Perform Skill Very Well | 2 = Perform Skill Very Well at Speed and Under Fatigue | 3 = Complete Mastery of technical and tactical components |
|---|---|---|

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 4 to 7 Training Age: 0 to 3 years | Age 8 to 10 Training Age: 1 to 4 years | Age 11 to 14 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **BALANCE & CO-ORDINATION** | | | | | | |
| Hand position | 1 | 3 | | | | |
| Riding one handed | 1 | 3 | | | | |
| Riding the plank | 1 | 3 | | | | |
| Slow riding | 1 | 3 | | | | |
| Single rollers | 1 | 2 | 3 | | | |
| Track stand | 1 | 2 | 3 | | | |
| Body position | 1 | 2 | 3 | | | |
| Multiple rollers | | 1 | 2 | 2 | 3 | |
| Attack position | | 1 | 2 | 2 | 3 | |
| Cone of movement/weight shift | | 1 | 2 | 2 | 3 | |
| Observational skills | | 1 | 2 | 2 | 3 | |
| **BRAKING** | | | | | | |
| The basics of braking (technique) | 1 | 3 | | | | |
| Controlling your speed | 1 | 3 | | | | |
| Emergency stop | 1 | 3 | 3 | | | |
| Different Surface conditions | | 1 | 2 | 2 | 3 | |
| **CORNERING** | | | | | | |
| The basics of cornering (technique) | 1 | 3 | | | | |
| Flat corners | 1 | 3 | | | | |
| Braking in corners | 1 | 2 | 3 | | | |
| Berms | | 1 | 2 | 2 | 3 | |
| Group cornering | | 1 | 2 | 2 | 3 | |
| Leaning | | 1 | 2 | 2 | 3 | |
| Line choice | | 1 | 2 | 2 | 3 | |
| Off comber corners | | 1 | 2 | 2 | 3 | |
| Out of a corner | | 1 | 2 | 2 | 3 | |
| Slide out | | 1 | 2 | 2 | 3 | |
| Switchbacks | | 1 | 2 | 2 | 3 | |
| **GROUP RIDING** | | | | | | |
| The basics of group riding | 1 | 2 | 3 | | | |
| Riding behind another rider | 1 | 2 | 3 | | | |
| Riding beside another rider | 1 | 2 | 3 | | | |
| Riding with other riders | 1 | 2 | 3 | | | |
| Contact with other riders | | 1 | 2 | 2 | 3 | |
| **JUMPING** | | | | | | |
| The basics of jumping (technique) | | 1 | 3 | 3 | | |
| Advanced jumping | | | 1 | 2 | 3 | |
| **MANUAL AND HOPING** | | | | | | |
| Bunny hop | 1 | 2 | 3 | | | |
| Front wheel lift | 1 | 2 | 3 | | | |
| Rear wheel lift | 1 | 2 | 3 | | | |
| Jet hop | | 1 | 2 | 2 | 3 | |
| Manual | | 1 | 2 | 2 | 3 | |
| Power assisted front wheel lift | | 1 | 2 | 2 | 3 | |

## BMX SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 4 to 7 Training Age: 0 to 3 years | Age 8 to 10 Training Age: 1 to 4 years | Age 11 to 14 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **MOUNTING AND DISMOUNTING** | | | | | | |
| Dismounting | 1 | 2 | 3 | | | |
| Mounting | 1 | 2 | 3 | | | |
| Clipping in | | 1 | 2 | 3 | | |
| Clipping out | | 1 | 2 | 3 | | |
| **PASSING** | | | | | | |
| The basics of passing | | 1 | 2 | 3 | | |
| Swoop pass | | 1 | 2 | 2 | 3 | |
| **PEDALLING** | | | | | | |
| The basics of pedalling (technique) | 1 | 3 | | | | |
| Straight line riding | 1 | 3 | | | | |
| In the saddle | 1 | 2 | 3 | | | |
| Out of the saddle | 1 | 2 | 3 | | | |
| Cadence | 1 | 2 | 3 | | | |
| Pedalling around the track | | 1 | 2 | 2 | 3 | |
| Seated acceleration | | 1 | 2 | 2 | 3 | |
| Sprinting | | 1 | 2 | 2 | 3 | |
| Standing acceleration | | 1 | 2 | 2 | 3 | |
| **PUMPING** | | | | | | |
| The basics of pumping | 1 | 2 | 3 | | | |
| Advanced pumping | | 1 | 2 | 2 | 3 | |
| Pump corners | | 1 | 2 | 2 | 3 | |
| Pump jet hop | | 1 | 2 | 2 | 3 | |
| Pump manual | | 1 | 2 | 2 | 3 | |
| **STARTING** | | | | | | |
| Balanced start | 1 | 2 | 3 | | | |
| Standing start | 1 | 2 | 3 | | | |
| Gate start | | 1 | 2 | 2 | 3 | |
| **STEP UP & STEP DOWN** | | | | | | |
| Step down | | 1 | 2 | 3 | | |
| Step up | | 1 | 2 | 3 | | |
| **BIKE MAINTENANCE** | | | | | | |
| Basic M check | 1 | 3 | | | | |
| Basic bike set up | 1 | 3 | | | | |
| Helmet check | 1 | 3 | | | | |
| Bike cleaning and lubrication | | 1 | 2 | 3 | | |
| Brake check | | 1 | 2 | 3 | | |
| Chain break | | 1 | 2 | 3 | | |
| Chain check | | 1 | 2 | 3 | | |
| Repairing an inner tube | | 1 | 2 | 3 | | |
| Replacing an inner tube | | 1 | 2 | 3 | | |
| Bike set up | | 1 | 2 | 2 | 3 | |
| **TACTICS** | | | | | | |
| First straight | | 1 | 2 | 2 | 3 | |
| Passing | | 1 | 2 | 2 | 3 | |
| Preventing passing | | 1 | 2 | 2 | 3 | |
| Rising with other riders | | 1 | 2 | 2 | 3 | |
| The starting gate | | 1 | 2 | 2 | 3 | |
| When to pass | | 1 | 2 | 2 | 3 | |

# APPENDIX 5

## MTB/OFF-ROAD AND TACTICS SKILLS MATRIX

The chart below demonstrates the window of optimum trainability for technical and tactical components where:

| 1 = Perform Skill Very Well | 2 = Perform Skill Very Well at Speed and Under Fatigue | 3 = Complete Mastery of technical and tactical components |
|---|---|---|

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **BALANCE & CO-ORDINATION** | | | | | | |
| Riding one handed | 1 | 3 | | | | |
| Riding the Plank | 1 | 3 | | | | |
| Slow Riding | 1 | 3 | | | | |
| Attack Position | 1 | 2 | 3 | | | |
| Hand Position | 1 | 2 | 3 | | | |
| Single Bump | 1 | 2 | 3 | | | |
| Body Position | 1 | 2 | 3 | | | |
| Track Stand | | 1 | 2 | 2 | 3 | |
| Cone of Movement/Weight Shift | | 1 | 2 | 2 | 3 | |
| Loading and Unloading | | 1 | 2 | 2 | 3 | |
| Multiple Bumps | | 1 | 2 | 2 | 3 | |
| Obvservational Skills | | 1 | 2 | 2 | 3 | |
| **BRAKING** | | | | | | |
| The Basics of Braking (Technique) | 1 | 3 | | | | |
| Controlling your Speed | 1 | 3 | | | | |
| Emergency Stop | 1 | 2 | 3 | | | |
| Different Surface Conditions | | 1 | 2 | 2 | 3 | |
| **CLIMBING** | | | | | | |
| The Basics of Climbing (Technique) | 1 | 2 | 3 | | | |
| In the Saddle | 1 | 2 | 2 | 2 | 3 | |
| Out of the Saddle | 1 | 2 | 2 | 2 | 3 | |
| Steep Climb | | 1 | 2 | 2 | 3 | |
| **CORNERING** | | | | | | |
| The Basics of Cornering (Technique) | 1 | 3 | | | | |
| Flat Corners | 1 | 3 | | | | |
| Braking in Corners | 1 | 2 | 3 | | | |
| Berms | | 1 | 2 | 2 | 3 | |
| Group Cornering | | 1 | 2 | 2 | 3 | |
| Leaning | | 1 | 2 | 2 | 3 | |
| Line Choice | | 1 | 2 | 2 | 3 | |
| Off Camber Corners | | 1 | 2 | 2 | 3 | |
| Out of a Corner | | 1 | 2 | 2 | 3 | |
| Switchbacks | | 1 | 2 | 2 | 3 | |
| Wet off Camber Corners | | 1 | 2 | 2 | 3 | |
| Corner on Rock Slabs | | | | | | |
| **DESCENDING** | | | | | | |
| The Basics of Descending (Technique) | 1 | 2 | 3 | | | |
| Cornering on a Descent | | 1 | 2 | 2 | 3 | |
| Steep Descent | | 1 | 2 | 2 | 3 | |
| **DRINKING AND FEEDING** | | | | | | |
| Feeding on the move | | 1 | 2 | 2 | 3 | |
| Taking a drink | | 1 | 2 | 2 | 3 | |
| Taking a Bottle from Feedzone | | 1 | 2 | 2 | 3 | |
| Taking food from Feedzone | | 1 | 2 | 2 | 3 | |

## MTB/OFF-ROAD SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **GEARS** | | | | | | |
| The Basics of Gears | 1 | 2 | 3 | | | |
| Selecting Gears | | 1 | 2 | 2 | 3 | |
| **GROUP RIDING** | | | | | | |
| The Basics of Group Riding | 1 | 3 | | | | |
| Riding behind another Rider | 1 | 2 | 3 | | | |
| Riding beside another Rider | 1 | 2 | 3 | | | |
| Riding with other Riders | 1 | 2 | 3 | | | |
| Singling Out | 1 | 2 | 3 | | | |
| Contact with other Riders | | 1 | 2 | 2 | 3 | |
| Following the Wheel | | 1 | 2 | 2 | 3 | |
| Group Communication | | 1 | 2 | 2 | 3 | |
| **JUMPING** | | | | | | |
| The Basics of Jumping (Technique) | | 1 | 2 | 3 | | |
| Advanced Jumping | | 1 | 2 | 2 | 3 | |
| **MANUAL AND HOPING** | | | | | | |
| Front Wheel Lift | 1 | 2 | 3 | | | |
| Rear Wheel Lift | 1 | 2 | 3 | | | |
| Bunny Hop | | 1 | 2 | 2 | 3 | |
| Manual | | 1 | 2 | 2 | 3 | |
| Power Assisted Front Wheel Lift | | 1 | 2 | 2 | 3 | |
| **MOUNTING AND DISMOUNTING** | | | | | | |
| Dismounting | 1 | 2 | 3 | | | |
| Mounting | 1 | 2 | 3 | | | |
| Clipping In | | 1 | 2 | 2 | 3 | |
| Clipping Out | | 1 | 2 | 2 | 3 | |
| Running Re-Mount | | 1 | 2 | 2 | 3 | |
| Running with the Bike | | 1 | 2 | 2 | 3 | |
| **PASSING** | | | | | | |
| The Basics of Passing | | 1 | 3 | | | |
| **PEDALLING** | | | | | | |
| The Basics of Pedalling (Technique) | 1 | 3 | | | | |
| Straight Line Riding | 1 | 3 | | | | |
| In the Saddle | 1 | 3 | 3 | | | |
| Out of the Saddle | 1 | 3 | 3 | | | |
| Cadence | 1 | 2 | 3 | | | |
| Off Camber | | 1 | 2 | 2 | 3 | |
| Pacing | | 1 | 2 | 2 | 3 | |
| Pedalling Around the Trail | | 1 | 2 | 2 | 3 | |
| Seated Acceleration | | 1 | 2 | 2 | 3 | |
| Sprinting | | 1 | 2 | 2 | 3 | |
| Standing Acceleration | | 1 | 2 | 2 | 3 | |
| **PUMPING** | | | | | | |
| The Basics of Pumping (Technique) | | 1 | 2 | 3 | | |
| Advanced Pumping | | 1 | 2 | 2 | 3 | |
| Pump Corners | | 1 | 2 | 2 | 3 | |
| Pump Jet Hop | | 1 | 2 | 2 | 3 | |
| Pump Manual | | 1 | 2 | 2 | 3 | |

## MTB/OFF-ROAD SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **STARTING** | | | | | | |
| Balanced Start | 1 | 3 | | | | |
| Standing Start | 1 | 3 | | | | |
| Starting from the Kerb | 1 | 3 | | | | |
| Cross Country Start | | 1 | 2 | 2 | 3 | |
| Downhill Start | | 1 | 2 | 2 | 3 | |
| Starting in a Bunch | | 1 | 2 | 2 | 3 | |
| **STEP UP AND STEP DOWN** | | | | | | |
| Drop Off | | 1 | 2 | 2 | 3 | |
| Power Assisted Drop Off | | 1 | 2 | 2 | 3 | |
| Step Down | | 1 | 2 | 2 | 3 | |
| Step Over | | 1 | 2 | 2 | 3 | |
| Step Up | | 1 | 2 | 2 | 3 | |
| **BIKE MAINTENANCE** | | | | | | |
| Basic Bike Set Up | 1 | 3 | | | | |
| Basic M Check | 1 | 3 | | | | |
| Helmet Check | 1 | 3 | | | | |
| Bike Cleaning & Lubrication | | 1 | 2 | 3 | | |
| Brake Check | | 1 | 2 | 3 | | |
| Chain Break | | 1 | 2 | 3 | | |
| Chain Check | | 1 | 2 | 3 | | |
| Repairing an Inner Tube | | 1 | 2 | 3 | | |
| Replacing and Inner Tube | | 1 | 2 | 3 | | |
| Bike Set Up | | 1 | 2 | 2 | 3 | |
| **TACTICS** | | | | | | |
| Bunch Starts | | 1 | 2 | 2 | 3 | |
| Passing | | 1 | 2 | 2 | 3 | |
| Preventing Passing | | 1 | 2 | 2 | 3 | |
| Riding with other Riders | | 1 | 2 | 2 | 3 | |
| The Starting Gate | | 1 | 2 | 2 | 3 | |
| When to Pass | | 1 | 2 | 2 | 3 | |

# APPENDIX 6

## ROAD & TIME TRIAL SKILLS AND TACTICS MATRIX

The chart below demonstrates the window of optimum trainability for technical and tactical components where:

1 = Perform Skill Very Well

2 = Perform Skill Very Well at Speed and Under Fatigue

3 = Complete Mastery of technical and tactical components

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **BALANCE & CO-ORDINATION** | | | | | | |
| Riding one handed | 1 | 3 | | | | |
| Riding the Plank | 1 | 3 | | | | |
| Slow Riding | 1 | 3 | | | | |
| Hand Position | 1 | 2 | 3 | | | |
| Track Stand | 1 | 2 | 3 | | | |
| Adopting an Aerodynamic Position | | 1 | 2 | 2 | 3 | |
| Body Position | | 1 | 2 | 2 | 3 | |
| Obvservational Skills | | 1 | 2 | 2 | 3 | |
| Riding Rollers | | 1 | 2 | 2 | 3 | |
| Tri Bars | | 1 | 2 | 2 | 3 | |
| **BRAKING** | | | | | | |
| The Basics of Braking (Technique) | 1 | 3 | | | | |
| Controlling your Speed | 1 | 3 | | | | |
| Emergency Stop | 1 | 2 | 3 | | | |
| Different Surface Conditions | | 1 | 2 | 2 | 3 | |
| **CLIMBING** | | | | | | |
| The Basics of Climbing (Technique) | 1 | 2 | 3 | | | |
| In the Saddle | | 1 | 2 | 2 | 3 | |
| Out of the Saddle | | 1 | 2 | 2 | 3 | |
| Steep Climb | | 1 | 2 | 2 | 3 | |
| **CORNERING** | | | | | | |
| The Basics of Cornering (Technique) | 1 | 3 | | | | |
| Flat Corners | 1 | 3 | | | | |
| Braking in Corners | 1 | 2 | 3 | | | |
| Group Cornering | | 1 | 2 | 2 | 3 | |
| Leaning | | 1 | 2 | 2 | 3 | |
| Line Choice | | 1 | 2 | 2 | 3 | |
| Out of a Corner | | 1 | 2 | 2 | 3 | |
| Switchbacks | | 1 | 2 | 2 | 3 | |
| **DESCENDING** | | | | | | |
| The Basics of Descending (Technique) | 1 | 2 | 3 | | | |
| Cornering on a Descent | | 1 | 2 | 2 | 3 | |
| Steep Descent | | 1 | 2 | 2 | 3 | |
| **DRINKING AND FEEDING** | | | | | | |
| Taking a drink | | 1 | 2 | 3 | | |
| Feeding on the bike | | 1 | 2 | 2 | 3 | |
| Taking a Bottle from Feedzone | | 1 | 2 | 2 | 3 | |
| Taking Food from Feedzone | | 1 | 2 | 2 | 3 | |
| **GEARS** | | | | | | |
| The Basics of Gears | 1 | 3 | | | | |
| Selecting Gears | | 1 | 2 | 2 | 3 | |

## ROAD & TIME TRIAL SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **GROUP RIDING** | | | | | | |
| The Basics of Group Riding | 1 | 3 | | | | |
| Riding behind another Rider | 1 | 2 | 3 | | | |
| Riding beside another Rider | 1 | 2 | 3 | | | |
| Riding with other Riders | 1 | 2 | 3 | | | |
| Singling Out | 1 | 2 | 3 | | | |
| Contact with other Riders | | 1 | 2 | 2 | 3 | |
| Echelon Riding | | 1 | 2 | 2 | 3 | |
| Following the Wheel | | 1 | 2 | 2 | 3 | |
| Group Communication | | 1 | 2 | 2 | 3 | |
| Positioning | | 1 | 2 | 2 | 3 | |
| Through and Off | | 1 | 2 | 2 | 3 | |
| **HOPING** | | | | | | |
| Front Wheel Lift | 1 | 2 | 3 | | | |
| Rear Wheel Lift | 1 | 2 | 3 | | | |
| Bunny Hop | | 1 | 2 | 2 | 3 | |
| **MOUNTING AND DISMOUNTING** | | | | | | |
| Dismounting | 1 | 2 | 3 | | | |
| Mounting | 1 | 2 | 3 | | | |
| Clipping In | | 1 | 2 | 3 | | |
| Clipping Out | | 1 | 2 | 3 | | |
| **PEDALLING** | | | | | | |
| The Basics of Pedalling (Technique) | 1 | 3 | | | | |
| Straight Line Riding | 1 | 3 | | | | |
| In the Saddle | 1 | 2 | 3 | | | |
| Out of the Saddle | 1 | 2 | 3 | | | |
| Cadence | 1 | 2 | 3 | | | |
| Pacing | | 1 | 2 | 2 | 3 | |
| Seated Acceleration | | 1 | 2 | 2 | 3 | |
| Sprinting | | 1 | 2 | 2 | 3 | |
| Standing Acceleration | | 1 | 2 | 2 | 3 | |
| **STARTING** | | | | | | |
| Standing Start | 1 | 3 | | | | |
| Starting from the Kerb | 1 | 3 | | | | |
| Hand Held Start | | 1 | 2 | 2 | 3 | |
| Starting in a Bunch | | 1 | 2 | 2 | 3 | |

## ROAD & TIME TRIAL SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **BIKE MAINTENANCE** | | | | | | |
| Basic M Check | 1 | 3 | | | | |
| Basic Bike Set Up | 1 | 3 | | | | |
| Helmet Check | 1 | 3 | | | | |
| Bike Cleaning & Lubrication | | 1 | 2 | 3 | | |
| Brake Check | | 1 | 2 | 3 | | |
| Chain Break | | 1 | 2 | 3 | | |
| Chain Check | | 1 | 2 | 3 | | |
| Repairing an Inner Tube | | 1 | 2 | 3 | | |
| Replacing and Inner Tube | | 1 | 2 | 3 | | |
| Bike Set Up | | 1 | 2 | 2 | 3 | |
| **TACTICS** | | | | | | |
| Attacking | | 1 | 2 | 2 | 3 | |
| Blocking | | 1 | 2 | 2 | 3 | |
| Break Away | | 1 | 2 | 2 | 3 | |
| Bunch Sprint | | 1 | 2 | 2 | 3 | |
| Chasing | | 1 | 2 | 2 | 3 | |
| Hilly Time Trial | | 1 | 2 | 2 | 3 | |
| Leading Out | | 1 | 2 | 2 | 3 | |
| Riding with other Riders | | 1 | 2 | 2 | 3 | |
| Sprint Finish | | 1 | 2 | 2 | 3 | |
| Stage Racing | | 1 | 2 | 2 | 3 | |
| Team Time Trial | | 1 | 2 | 2 | 3 | |
| The Starting Gate | | 1 | 2 | 2 | 3 | |

# APPENDIX 7

## TRACK SKILLS AND TACTICS MATRIX

The chart below demonstrates the window of optimum trainability for technical and tactical components where:

| 1 = Perform Skill Very Well | 2 = Perform Skill Very Well at Speed and Under Fatigue | 3 = Complete Mastery of technical and tactical components |
|---|---|---|

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **BALANCE & CO-ORDINATION** | | | | | | |
| Riding one handed | 1 | 3 | | | | |
| Riding the Plank | 1 | 3 | | | | |
| Slow Riding | 1 | 3 | | | | |
| Body Position | 1 | 2 | 3 | | | |
| Hand Position | 1 | 2 | 3 | | | |
| Track Stand | 1 | 2 | 3 | | | |
| Obvservational Skills | | 1 | 2 | 2 | 3 | |
| Madison Hand Grip | | 1 | 2 | 2 | 3 | |
| Riding Rollers | | 1 | 2 | 2 | 3 | |
| **BRAKING** | | | | | | |
| The Basics of Braking (Technique) | 1 | 3 | | | | |
| Controlling your Speed | 1 | 3 | | | | |
| Slowing Down | 1 | 2 | 3 | | | |
| Using a Fixed Wheel | | 1 | 2 | 3 | | |
| **CORNERING** | | | | | | |
| The Basics of Cornering (Technique) | 1 | 3 | | | | |
| Flat Corners | 1 | 3 | | | | |
| Group Cornering | | 1 | 2 | 2 | 3 | |
| Leaning | | 1 | 2 | 2 | 3 | |
| Line Choice | | 1 | 2 | 2 | 3 | |
| Out of a Corner | | 1 | 2 | 2 | 3 | |
| **GEARS** | | | | | | |
| The Basics of Gears | 1 | 3 | | | | |
| Selecting Gears | | 1 | 2 | 2 | 3 | |
| **GROUP RIDING** | | | | | | |
| The Basics of Group Riding | 1 | 3 | | | | |
| Riding behind another Rider | 1 | 2 | 3 | | | |
| Riding beside another Rider | 1 | 2 | 3 | | | |
| Riding with other Riders | 1 | 2 | 3 | | | |
| Changing | | 1 | 2 | 2 | 3 | |
| Coach Communication | | 1 | 2 | 2 | 3 | |
| Contact with other Riders | | 1 | 2 | 2 | 3 | |
| Dropping on to a wheel | | 1 | 2 | 2 | 3 | |
| Following the Wheel | | 1 | 2 | 2 | 3 | |
| Group Communication | | 1 | 2 | 2 | 3 | |
| Madison Changes | | 1 | 2 | 2 | 3 | |
| Positioning | | 1 | 2 | 2 | 3 | |
| Through and Off | | 1 | 2 | 2 | 3 | |
| **HOPING** | | | | | | |
| Front Wheel Lift | 1 | 2 | 3 | | | |
| Rear Wheel Lift | 1 | 2 | 3 | | | |
| Bunny Hop | | 1 | 2 | 2 | 3 | |

## TRACK SKILLS MATRIX

| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **MOUNTING AND DISMOUNTING** | | | | | | |
| Dismounting | 1 | 2 | 3 | | | |
| Mounting | 1 | 2 | 3 | | | |
| Clipping In | | 1 | 2 | 3 | | |
| Clipping Out | | 1 | 2 | 3 | | |
| Controlled Stop on the perimeter fence | | 1 | 2 | 3 | | |
| Controlled Stop on the inner rail | | 1 | 2 | 3 | | |
| Controlled Stop unaided | | 1 | 2 | 3 | | |
| Controlled Stop with the aid of a helper | | 1 | 2 | 3 | | |
| Moving off from the inner rail | | 1 | 2 | 3 | | |
| Moving off from the perimeter fence | | 1 | 2 | 3 | | |
| Moving off unaided | | 1 | 2 | 3 | | |
| Moving off with the aid of a helper | | 1 | 2 | 3 | | |
| **PASSING** | | | | | | |
| Passing | | 1 | 2 | 2 | 3 | |
| Swoop Pass | | 1 | 2 | 2 | 3 | |
| **PEDALLING** | | | | | | |
| The Basics of Pedalling (Technique) | 1 | 3 | | | | |
| Straight Line Riding | 1 | 3 | | | | |
| Cadence | 1 | 2 | 3 | | | |
| In the Saddle | 1 | 2 | 3 | | | |
| Out of the Saddle | 1 | 2 | 3 | | | |
| Controlling Speed | | 1 | 2 | 2 | 3 | |
| Flying 200m Time Trial | | 1 | 2 | 2 | 3 | |
| Pacing | | 1 | 2 | 2 | 3 | |
| Seated Acceleration | | 1 | 2 | 2 | 3 | |
| Seated Deceleration | | 1 | 2 | 2 | 3 | |
| Sprinting | | 3 | 2 | 2 | 3 | |
| Standing Acceleration | | 3 | 2 | 2 | 3 | |
| **STARTING** | | | | | | |
| Standing Start | 1 | 3 | | | | |
| Hand Held Start | | 1 | 2 | 2 | 3 | |
| Pushed Start | | 1 | 2 | 2 | 3 | |
| Starting in a Bunch | | 1 | 2 | 2 | 3 | |
| **BIKE MAINTENANCE** | | | | | | |
| Basic M Check | 1 | 3 | | | | |
| Basic Bike Set Up | 1 | 3 | | | | |
| Helmet Check | 1 | 3 | | | | |
| Bike Cleaning & Lubrication | | 1 | 2 | 3 | | |
| Chain Break | | 1 | 2 | 3 | | |
| Chain Check | | 1 | 2 | 3 | | |
| Chain Tension | | 1 | 2 | 3 | | |
| Repairing an Inner Tube | | 1 | 2 | 3 | | |
| Replacing and Inner Tube | | 1 | 2 | 3 | | |
| Bike Set Up | | 1 | 2 | 2 | 3 | |

## TRACK SKILLS MATRIX

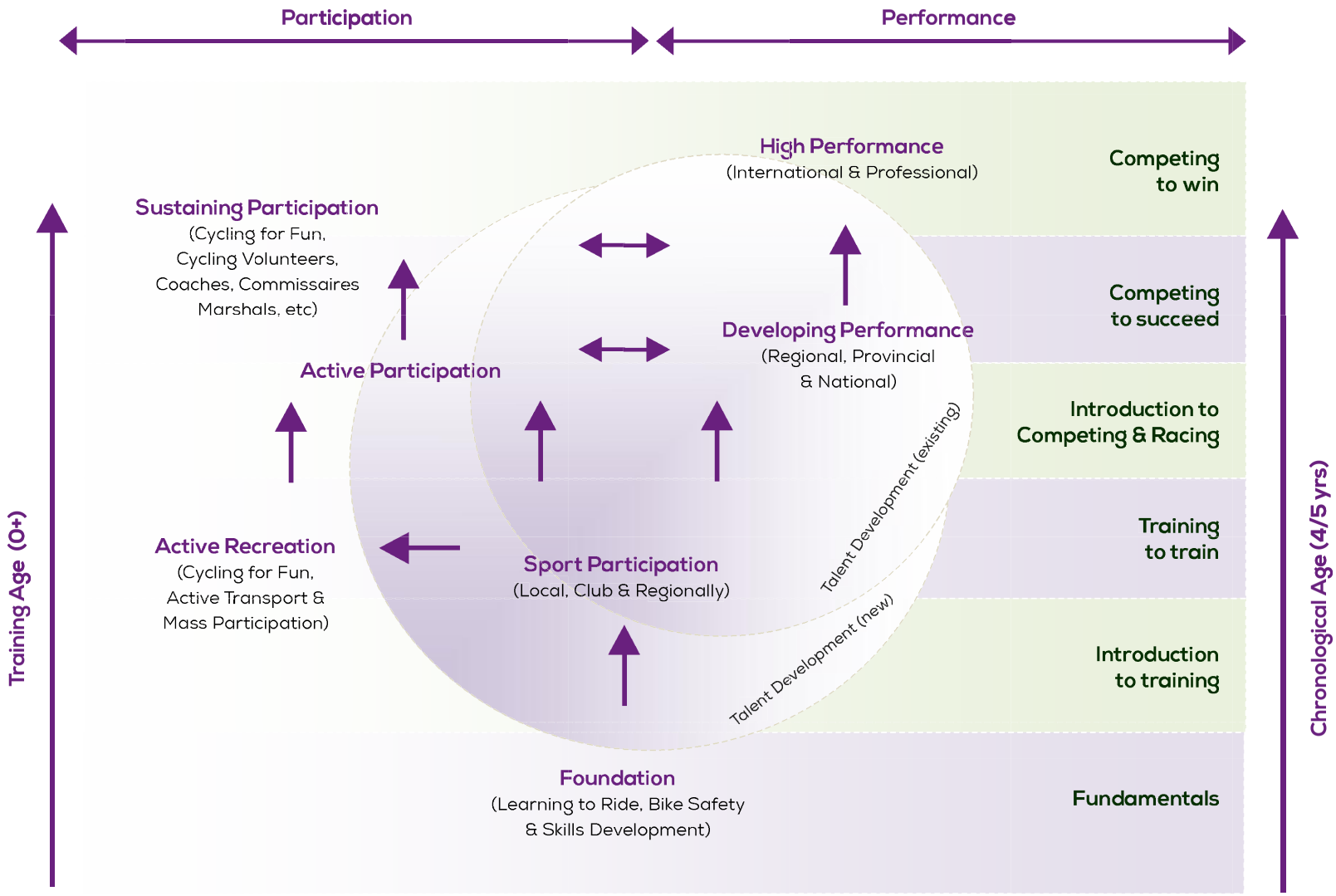
| | FUNda-mentals | Introduction to Training | Training to Train | Introduction to Competition and Racing | Competing to Succeed | Competing to Win |
|---|---|---|---|---|---|---|
| | Age 7 to 9 Training Age: 0 to 3 years | Age 10 to 12 Training Age: 1 to 4 years | Age 12 to 15 Training Age: 3 to 5 years | Age 15 to 18 Training Age: 5 to 6 years | Age 18 to 23 Training Age: 6+ years | Age 23+ Training Age: 8+ years |
| **TACTICS** | | | | | | |
| Attacking | | 1 | 2 | 2 | 3 | |
| Blocking | | 1 | 2 | 2 | 3 | |
| Brake Away | | 1 | 2 | 2 | 3 | |
| Bunch Sprint | | 1 | 2 | 2 | 3 | |
| Chasing | | 1 | 2 | 2 | 3 | |
| Devil | | 1 | 2 | 2 | 3 | |
| Distance Races | | 1 | 2 | 2 | 3 | |
| Individual Pursuit | | 1 | 2 | 2 | 3 | |
| Keirin | | 1 | 2 | 2 | 3 | |
| Leading Out | | 1 | 2 | 2 | 3 | |
| Madison | | 1 | 2 | 2 | 3 | |
| Points Race | | 1 | 2 | 2 | 3 | |
| Riding with other Riders | | 1 | 2 | 2 | 3 | |
| Sprint | | 1 | 2 | 2 | 3 | |
| Sprint Finish | | 1 | 2 | 2 | 3 | |
| Team Pursuit | | 1 | 2 | 2 | 3 | |
| The Starting Gate | | 1 | 2 | 2 | 3 | |
| Time Trial | | 1 | 2 | 2 | 3 | |

# APPENDIX 8
# COACH EDUCATION PROGRAMME

## The Cycling Ireland Coach Education Program is part of the Coaching Development Programme for Ireland in partnership with Coaching Ireland

| CYCLING IRELAND PROGRAMMES | COMPETITIVE LEVEL | PRE-REQUISITE | CI COACHING AWARDS | CI SPECIFIC AWARDS | ADDITIONAL LEARNING |
|---|---|---|---|---|---|
| | **National**<br>**International** | Level 2 Discipline Specific Coaching Award | **CI LEVEL 3** | | On going coach support opportunities |
| | **Clubs**<br>**Regional**<br>**Provincial** | Level 1 Discipline Specific Coaching Award | **CI LEVEL 2** | | On going coach support opportunities |
| **GEARING-UP - OFF-ROAD**<br>**GEARING-UP - ROAD**<br>**BIKE FOR LIFE** | **School**<br>**Club**<br>**Regional** | Foundation Coaching Award | **CI LEVEL 1** | Road & TT<br>Track<br>Mountain Biking | GU Off Road<br>GU Road<br>Bike for Life |
| **SPROCKET ROCKET**<br>**BIKE FOR LIFE** | **School**<br>**Club** | Any interested person | **CI FOUNDATION** | Sprocket Rocket | First Aid<br>Children's Officer<br>Code of Conduct |

# APPENDIX 9
# CYCLISTS PATHWAY



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Wayne Goldsmith (2013), Performance Practice Model: The 7 steps of performance practice.

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