



# On-the-Bike Skills 101

Training Summary for NICA Level 2 Certification

Supported by REI

Developed in Partnership with IMBA



Photo credit: Todd Bauer

BUILDING STRONG BODY • MIND • CHARACTER  
THROUGH INTERSCHOLASTIC CYCLING



## Dedication

This manual is dedicated to NICA Coaches across the United States. Without you this program would not exist.

Thank you for all you do to build strong mind, body and character in NICA student-athletes.

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# INTRODUCTION

NICA Trainers ensure that licensed coaches working with NICA student-athletes receive the resources and support they require to attend to the biological, psychological, and social development needs specific to adolescents participating in quality interscholastic cycling programs. This manual is an overview of the basic training coaches need to receive in order to administer effective mountain bike skills instruction for NICA student-athletes.

## The key objectives for this training are:

- » Provide coaches an experiential learning opportunity on how to hold NICA practices;
- » Demonstrate how to effectively coach a NICA interscholastic cycling team/club;
- » Introduce the skills coaches will need to teach their student-athletes; and
- » Facilitate a safe learning environment for coaches to practice all aspects of the training and receive mentorship from competent supporters.

This training is not meant to be a “one-stop” resource covering the wide variety of situations and challenges a NICA coach may experience in working with student-athletes, other coaches and parents. The *NICA On-the-Bike Skills Training* is designed to provide an overview of what coaches working with NICA student-athletes need to know to be successful in delivering a youth development experience through mountain biking. This is the beginning of a journey that to date has no end. NICA continues to produce resources for coaches who continue to ask and seek greater knowledge and skills to refine their coaching abilities. Continuing educational opportunities provide a progressive path for refinement and expansion of the topics addressed herein and we encourage all NICA licensed coaches to keep informed of continuing education opportunities as advertised thru periodic *NICA Coaches Newsletters* and league specific announcements.

This manual is structured sequentially and consistent with the typical format of a NICA practice. As a preface to the NICA On-the-Bike Skills instructional material, the necessary gear coaches need to procure to ensure a safe, educational, and enjoyable experience for all is reviewed. This is followed by a brief discussion regarding best-practices when it comes to bike safety and NICA rules and regulation compliance. It is important to remember that NICA’s best practices are constantly evolving based on coaches’ experiences encountered ‘in the field’. Therefore, it is important to stay informed by keeping your coach license current and review updates as they are issued from NICA and your home league.

## Other resources contributing to NICA On-the-Bike Skills Training:

- » [Risk management webinar series](#)
- » [NICA student-athlete coaching philosophy](#)

Before getting to the actual skills instruction portion of the training, strategies for ensuring that both the student-athletes and that their equipment are ready for the demands of each practice session are reviewed. A short portion of this manual is dedicated to “trainer tips” related to pre-practice preparation.

Detailed information related to short course setup is given its own section within the manual. Though brief, this will capture the who, what, where, when, why, and how of the short course’s role within NICA coach and student-athlete development. This training has proven especially valuable to new coaches as well as for NICA Trainers in their assessment of coach and student-athlete competence and readiness for progression.

Also valuable to ensuring practices get off in the right gear is training on how to hold staff and student-athlete briefings and debriefs at the beginning and end of practice. A review of what is provided during On-the-Bike Skills training is included leading into the skills section of the manual.

## YOU CANNOT GIVE SOMETHING YOU HAVEN’T GOT

It is essential that volunteers work toward proficiency in coaching and skills instruction. After all, student-athletes are working hard toward growth and development, both on and off the bike. What better way to show we are committed to helping them in that process than by leading by example.

During On-the-Bike Skills training, participants are instructed on two primary coach functions:

1. How to teach adolescents bike handling skills development and refinement; and
2. How to become proficient (enough) to teach adolescents skills development and refinement.

Note, NICA On-the-Bikes Skills Training is NOT designed to teach coaches themselves to be better riders, though the instruction provided will certainly help participants’ riding skills. The primary outcome for participants is to have a full disclosure of NICA On-the-Bike Skills instruction content. Additional training and partnerships with skills instruction organizations are available to assist coaches to become more proficient riders. Links to resources are provided in the resource section of this manual.

Coach development is ongoing. The opportunities for coaching services through NICA are ever-evolving. It is important that we remember to always practice within our competence. But how do we know what we are proficient (enough) to coach? Assessment provides us a method for

self-evaluation, peer-to-peer evaluation, and formal demonstration of competence to accreditors. This manual introduces the method of assessment, the tools NICA uses, and sets-up the next level of the coaching/training process.

The following items are important to convey through NICA On-the-Bike Skills Training. The overarching objective of this training is to help prospective and current NICA Coaches gain proficiency in demonstrating and instructing the following aspects of riding:

- » Improve bike handling skills over varying terrain;
- » Maintain flow and speed on the bike;
- » Navigate challenging terrain smoothly and efficiently;
- » Build confidence for riding and racing; and
- » Maximize performance in all NICA programming.

To achieve these aims, we work on these specific elements of mountain biking:

- » Bike and equipment set-up for safety, comfort and performance;
- » Bike maintenance and repairs, both on and off the trail;
- » Negotiating challenging terrain;
- » Ride with intention, safely and grace;
- » Climb and descend efficiently and safely;;
- » Carrying speed through corners;
- » Navigating mindfully through rocks, roots, bumps, jumps, small drops and other obstacles;
- » Using the trails and its obstacles to our advantage rather than being hindered by them;
- » Proportionate braking techniques;
- » Efficient and effective pedaling over all terrain types;
- » Body positioning and 'working the bike' to get more out of your body and bike;
- » Line choice to ensure safe progress, optimal fun and less energy expenditure; and
- » Race planning, preparation, strategy and execution.

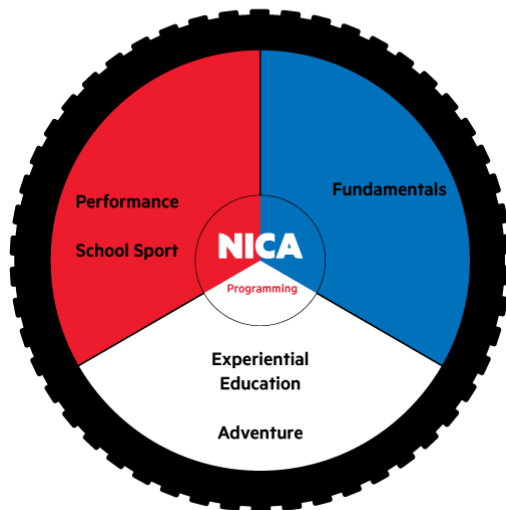


*NICA President and past high school team coach, Austin McNerny, briefing North Carolina League student-athletes*

## PROGRAMMING FOR ALL

Coaches and student-athletes come to NICA teams with widely varying interests. Coaches are challenged to curb their individual interests and experiences in order to develop a team culture of inclusivity for all student-athletes. Focusing primarily on performance, competition, or results may alienate team members or discourage continued participation. Conversely, a team culture focused primarily on experiential education or adventure may stifle an individual's need to recognize personal growth, progression, and achievement. Coaches are to explore team activities that cater to these varying needs in order to promote continued growth of the team and long term athlete development of its members.

### NICA Programming



## LEAD BY EXAMPLE

Coaches lead by example to define and develop their team's behavioral culture. Respect for fellow coaches, team members, family members, and all aspects of NICA programming are not optional. Additionally, coaches develop an awareness of our shared responsibility within our larger community of outdoor enthusiasts. Mountain biking in most areas is a privilege. Develop an awareness of how our behavior on and off the bike impacts our opportunities within our community. Educate team members to evaluate moments of elevated risk and the impact it may have to themselves and others.

### Ride with respect

Adolescents often learn through observation. As a coach, all eyes are on you. Model appropriate and respectful behavior and expect that of your team members. Develop a team culture that creates a positive presence within the community.

The following are examples of how coaches can model respect to student-athletes:

**Develop respect for the trail and nature** by making team members aware of the work that goes into building trails. Respect is shown by riding in a way that doesn't damage the trail by skidding or by riding when trails are wet or susceptible to damage. Leave no trace!

**Respect for coaches and volunteers** is nurtured through positive behavior while interacting with fellow coaches. We are volunteers. Display respect and appreciation for those that contribute while encouraging others showing interest to become more involved.

**Develop respect for the gear and equipment** by performing necessary routine maintenance to keep it working properly. Help others to understand and do the same. Maintained equipment will last longer. Even allowing it to be passed to another rider or someone less fortunate. Bikes are made to last and should. The bicycle is a tool used in our mission to develop strong body, minds, and character.

**Respect oneself and others** and progress together to create a more rewarding, meaningful, and shared experience. Encourage self-respect by encouraging student-athletes to take care of themselves and perform at their best. Respect the effort exhibited. The bike is not a measure of the rider.

**Respect for the consequence** of falling is learned by coaches explaining the consequences and unfortunately sometimes athlete's experiencing consequences. Expand limits by respecting the effort required to overcome them. Slower gains often produce more meaningful results. Make it a memorable journey rather than immediate satisfaction.

## EFFECTIVE TEACHING

*The purpose of the NICA On-the-Bike Skills training series is to provide coaches with the knowledge and tools to be effective mentors and teachers of basic skills appropriate to varying stages of student-athlete's development.*

### Learning Styles

There are a variety of learning styles and everyone has their own mix of styles with which they learn best by. As instructors, we should be aware of the ways people learn including visual, verbal, and physical (kinesthetic), or by reading and writing. An easy way to appeal to the various learning styles is by using the "tell it, show it, do it, review it" method.

#### » Tell It (verbal/auditory learning)

Direct Instruction (lecture) - Simply providing the information to the participant(s). Deliver the material in a clear, concise, and systematic fashion. Direct Instruction is not always the best approach for teaching youth and advanced riders. They often prefer a less structured teaching style and can learn more from an interactive approach.

Keywords - Brief phrases or words that directly associate with the bike and body movements. Sometimes a mantra or catchy phrases can be used to help with memorization. Participants will only remember 3-5 things at a time. Utilizing keywords when teaching a skills is important.

Guided Discovery - Inquiry-Based Instruction. The participants are not provided an exact answer but rather the resources to find the answer themselves. Guided Discovery is a form of interactive learning and consists of getting your participants to think and get involved in solving problems.

#### » Show It (visual learning)

Static Demo - A skill demonstration executed without riding; by standing to the side of the bike, or without a bike at all. This allows the participant to see key or individual movements one at a time. Also allowing them to mimic the instructor and begin to develop muscle memory.

Moving or Rolling Demo - A skill demonstration executed with riding the bike. It is recommended that the instructor reduces any talking while performing a moving demo. Allow the visual learner to focus on what they see without distraction. Instead say nothing or only repeat the key words.

#### » Do It (kinesthetic learning)

Student practice the skill to develop muscle memory through repetition. This practice can be done while riding although instructors can also add stationary holds to reduce variables and allow for a more thorough understanding of the skill.

#### » Review It

Review to reinforce learning through direct instruction and guided discovery. Providing handouts for student-athlete's use and later review can also be helpful as well as allowing time for participants to ask questions and discuss in a group setting can help.

### Method for Presenting Each Skill

Name the skill to be instructed

Describe when, where, and why the skills is used

Provide Teaching Points (Tell It)

Demonstration (Show It)

Practice and Progression (Do It)

Wrap-up (Review It)



*Coach stops mid ride to check on student-athletes, incorporating learning styles, skills instruction and good ride leading.*

# THE GEAR

## Essentials for Coaches

Coaches need to lead by example and this means being properly equipped and dressed to handle all reasonable situations they may encounter during a team practice. As coaches, we will benefit most from role modeling what we want the student-athletes to do. Chapter 7 of the *NICA Coaches Manual* discusses equipment and clothing in detail and Leaders' Summit instruction provides specific training on how to help riders feel safe and comfortable with the gear they have. Coaches who attend NICA On-the-Bike Skills training should embrace and demonstrate a comprehension of this training. Having a functioning and appropriate mountain bike; wearing youth development appropriate clothing; carrying basic first aid items; and having enough clothing, water, food, and basic bike equipment/tools to adequately address the most commonly encountered situations are essential in order to be a high functioning NICA coach..

**Essentials:** non-negotiable gear coaches need:

- » Mountain bike with functioning gears and brakes
- » Helmet that is properly fitted to one's head
- » Youth development appropriate shirt or jersey and riding shorts/pants
- » Shoes that completely cover the toes and heels
- » Properly sized gloves
- » Camelbak or similar backpack/fanny pack allowing for gear to be carried.

The first five items above are expected of NICA student-athletes, and, as such, should be role modelled by the coaches as well. The backpack/Camelbak is important for making sure the coach has all they will need to respond to an incident while working with the student-athletes.

**Bonus Equipment:** Suggested equipment to bring to NICA On-the-Bike Skills Training:

- » Glasses
- » Sunscreen
- » Layers to accommodate for weather variations
- » Nourishment and hydration
- » Bike support (multi-tool, pump, tube(s), assorted small bolts, derailleur cable, chain lube)
- » Gear variations you intend to use as a NICA coach
- » Basic first aid kit



# THE BIKE

## Mountain Bike

As stated above, coaches need to have with them and train with the gear they are going to be coaching and instructing in when working with NICA student-athletes. Student-athletes are expected to abide by specific NICA rules and coaches are held to those same standards. Requirements established for student-athletes are rooted in primary risk management strategies proven to reduce the potential for serious injury. These best-practices benefit coaches in the same way.

### Essentials:

- » Mountain bike with appropriate gears
- » Functional front and rear brakes
- » Bar end caps/plugs, no bar ends

In addition to the guidance provided by the *NICA Rulebook*, Chapter 9 of the *NICA Coaches Manual* instructs on how to make the basic adjustments that create an optimal bike setup. Coaches who attend NICA On-the-Bike Skills training should embrace and demonstrate a comprehension of basic bike fit. Having an awareness of proper bike fit is another critical indicator of coaching best-practice comprehension.

### Elements of Basic Bike Fit:

- » Saddle height and fore/aft;
- » Handlebar width, reach, and drop; and
- » Position of controls such as brake levers and shifters.

## A, B, C, D

The four pre-practice/ride bike inspection steps that significantly reduce potential for incident and/or injury are “A”: air, “B”: brakes, “C”: crankset/ chain/ cassette, and “D”: derailleur. Trainers of NICA On-the-Bike Skills emphasize that tire air pressure should always be adjusted to respond to the terrain, which may vary with weather and location. The components of the braking system are positioned correctly and bolts are tight. Chain is clean and lubricated and the cassette and chainring(s) are inspected to ensure they are tight in place and that there are no broken teeth or damaged chain links. Inspection that the chain shifts smoothly throughout the gears will determine if derailleur adjustments are warranted.

*You can't do it all, all of the time...*

The factors indicating whether or not someone is going to need mechanical assistance are numerous and coaches would be hard pressed to do it all, all of the time. Trainers demonstrate strategies on how to structure practices with pre-practice readiness activities that ensure these items get accounted for.



### Pre-practice A, B, C, D Strategies:

- » Teach the student-athletes how to do the inspections during pre-season activities;
- » Create a method for them to be accountable to each other (ie. triads);
- » Manage and oversee the process; and
- » Conduct continuing educational training throughout the season.

### Benefits of Independent Bike Readiness:

- » Mechanical aptitude
- » Personal responsibility
- » Team development
- » Efficiency
- » Continuing education

*Stillwater Teammates of the Minnesota League checking bike*

## PRE-PRACTICE PREPARATION

Establishing a consistent pre-practice preparation process not only creates good safety habits, but also allows more time to be spent actually riding and engaging in skills development. NICA On-the-Bike Skills trainers instruct on how practice schedules are created, organized, and communicated. Attendees learn why the training venue was chosen and why it makes for a good place to hold the training. Restroom facilities and any features that present elevated risk are highlighted at the beginning of the session.

Demonstrating a pre-practice staff brief and task delegation to Level 1, Level 2, and Level 3 Coaches are important teaching points that get covered in On-the-Bike Skills training. Large groups are broken down into smaller groups of up to no more than six (6) participants.

Assessment, activity planning, the practice session, and review from previous practices are all variables that are factored in to the pre-practice plan. The coaching philosophy of the Head Coach, the competencies of the Level 1, 2, and 3 Coaches supporting them, the interests and competencies of the student-athletes, and the resources available are also important determinants that trainers cover in NICA On-the-Bike Skills Training.

### Pre-practice Activities:

- » Practice plan
- » Venue survey
- » Emergency action plan
- » Weather considerations
- » Assessment review

Pre-practice preparation is a proactive method to reduce the potential for risk, to provide an educational experience for all student-athletes on the team, and ensure there is ample time for student-athletes to play. This is true for NICA On-the-Bike Skills training as well.

### Account for the goals and objectives of the team and student-athletes

### Ensure for a safe, educational, and enjoyable experience

### Progress sequentially



*Coach checks in with student-athlete before ride begins*

## THE COACHES' TOOLBOX

Coaches of some sports are fortunate enough to only need a whistle and painted lines in the grass. NICA coaches are forced to improvise and use creativity to provide direction and challenge during skills instruction and practice. These items can be used to provide direction to those riding or create challenges for the riders to overcome. A talented and experienced coach sees a large grass field as a blank canvas. They pull out their tools to create a fun, enjoyable, and challenging experience for student-athletes on bikes. Consider creating a small collection of items that can be used during practice.

### Effective Use of a Venue

Coaches may find elements or characteristics of practice venues that provide opportunities to develop skills. A gravel or dirt path may have lower rolling resistance and create a linear flow to practice activities. A grass or dirt slope provides opportunities to involve climbing and descending skills. Trees and low vegetation are natural landmarks for turning drills. Painted lines intended for other sports activities can be used for boundaries.

### Tools to Provide Direction

Sports cones are used to organize movement and provide direction similar to larger traffic cones on a roadway. Cones of various shapes and sizes are available at sporting goods stores. Nearly flat circular cones are inexpensive, lightweight, and easy to carry. Nearly flat cones are easy to be seen but not knocked over or moved by wind. Pin flags, available in large quantities at home improvement stores, can be used similarly to cones in larger areas. Pin flags are often easier to be seen from a distance. Sections of climbing rope can be used to create a curved path for riders to follow. Spray paint in grass can also assist in rider line choice and/or direction.

See Appendix B for diagrams of common cone layouts.

### Tools to Create Challenges

How do we recreate elements of a mountain bike trail when no trail is available or appropriate? Sticks or rocks may be nearby and collected for use during practice. When none are available consider adding to your collection of tools. Tennis balls can represent rocks. Small sections of wood could be used as roots. Try a section of narrow PVC pipe to represent a slippery or wet root. You are only limited by your own creativity.



*Contents of a coaches' toolbox may include cones, flags, balls, sticks or sections of wood, rope, and spray paint.*

## SHORT COURSE SET UP

NICA encourages the use of a short course to simulate the demands of trail riding. The short course can be created in a field or park environment using cones, flags and the natural terrain. This allows the coach to reduce the risk of injury as he/she observes the student-athletes developing skills. The short course also provides an opportunity for the team to have a productive practice session when fewer coaches are present.

NICA On-the-Bike Skills Training demonstrates how coaches can use the short course for the majority of early season practices.

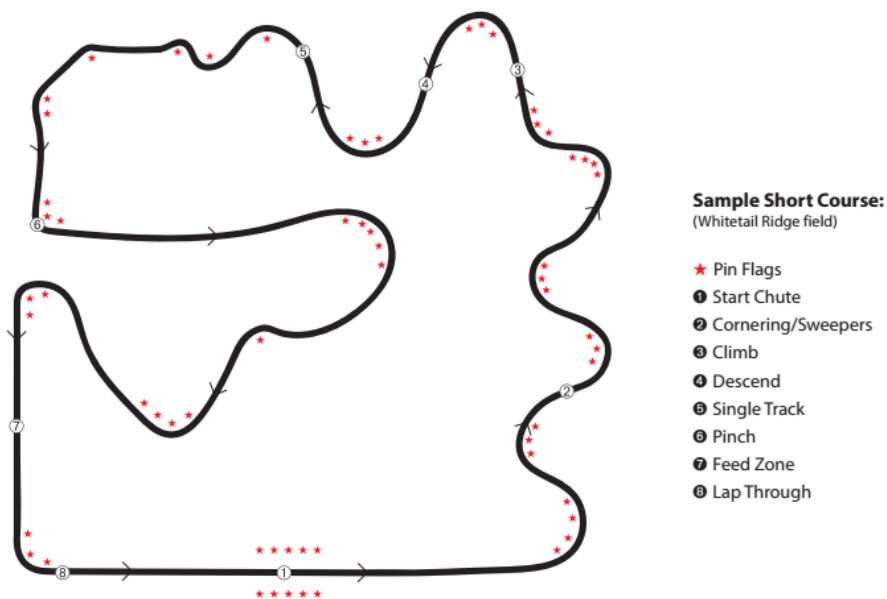
### The Short-Course Provides:

- » Coaches a method to hold practice with a smaller support staff vs. what is needed on the trail
- » Student-athletes the opportunity to be creators of their environment
- » Simulation of key aspects of NICA race courses
- » Warm-up area
- » Opportunity to assess for trail/NICA event readiness
- » Physical literacy and endurance development
- » Attentive coaching
- » Flexibility when resources are limited
- » Easy access to riders for parents and emergency response
- » Visibility to the community
- » Inclusivity

Trainers encourage coaches to consider using the short course for mid-week practices, focusing on skills development, refinement, endurance building, and trail riding best-practices. Trail rides are scheduled for the weekend and are focused on practicing the skills covered during the week. The example below shows a sample short course.

Venue: The space required is highly variable as every venue is different. A football or soccer field is a suitable location or a park of approximately the same size. All participants should be within sight at all times.

Supplies: A package of 100 flags or small cones from your local hardware store.



Teaching how the application of short course practices translate to the trail and how to establish a system for the process are key components of NICA On-the-Bike Skills Training. Topics such as venue survey, emergency action planning, breaking into manageable groups, assigning ride lead and support duties to trained/competent staff, and stationing staff at strategic points on the trail are all aspects of coach responsibilities that can be practiced by coaches on the short course before transitioning to the trail.

## RIDE LEADER BRIEFING BY HEAD COACH

The pre-practice Head Coach brief to the support staff (Assistant Coaches, Ride Leaders, General Volunteers) is an essential component of the practice structure, and it is important that trainers of coaches take the time to simulate that process during NICA On-the-Bike Skills training. Each person on the coaching team has a unique skill set, interest, and availability and the task they are assigned to fulfill during practice should match those variables as much as possible. NICA On-the-Bike Skills trainers should take the time to demonstrate how the following considerations are addressed through the Head Coach briefing:

- » Lesson/practice preparation
- » Biopsychosocial considerations (for both coaches as well as student-athletes)
- » Emergency response/action plan
- » Competence
- » Progression
- » Ability to work with different types of learners
- » Working toward varying goals and objectives
- » Character development
- » Resource management
- » Weather and environmental variables



Head Coach brief to Ride Leaders

## STUDENT-ATHLETE BRIEFING BY RIDE LEADER

Once the Head Coach has briefed the coaching staff on the practice plan, Ride Leaders and Assistant Coaches should be empowered to disseminate that information to the student-athletes. As a reminder, Coach License Levels 1, 2 and 3 are different than the coach roles filled during a team practice. For example, you may have several Level 3 coaches filling the Ride Leader positions during a practice.

Coaches may consider the following for student-athlete briefings:

- » Fair, firm, and consistent rules for the practice
- » Maintaining a routine so everyone knows what to expect
- » Student-athletes shouldn't be overloaded with information. The more coaches try to teach at once and the greater the chance important information will be forgotten
- » Safety talk



Salinas High School MTB Team coaches briefing the student-athletes before practice

# EFFECTIVE TRAIL GUIDING

*As coaches move instruction to actual trails, increased care should be taken to ensure a safe and fun experience for everyone.*

Mountain bike guiding is a multi-million dollar industry. Respectable guides invest in extensive training in order to ensure a safe and fun experience for their clients. They are continuously preparing for their next adventure involving unpredictable circumstances and clients they may be unfamiliar with. As NICA coaches, we use “guiding” principles in all our roles; Head Coach, Assistant Coach, and Ride Leader. As such, we can borrow from the guiding industry to ensure a safe and fun experience for our developing student-athletes.

## Be Prepared

Pre-ride routes that you plan to use for team rides. Become familiar with the terrain, hazards, exit points, shortcuts, challenging features and check for cellular phone coverage in case of an emergency (and know who to actually call to summon emergency medical support). Know multiple exit points as they may be necessary in the case of an emergency. Legal shortcuts can be used to shorten the route if you are running late or need to finish earlier than expected. Always lead with the adequate backpack of mechanical and food supplies, first aid, and communication device(s) detailed in Video 1 of Risk Management for Team Practice. A Ride Leader should carry emergency contact and medical info for each of the participants on the ride. A small notepad or incident report form should be in the Ride Leader’s pack in order to document and record situations that arise.

## Safety Talk

As outlined in Risk Management Videos 1 and 2, before any guided ride begins, a coach should perform a safety talk. This is the last opportunity to assert group management control before embarking on the ride. Make your safety talk brief, clear, and memorable.

### » Stay behind the Ride Leader

The Ride Leader should lead riders during a ride in order to control navigation and pace of the group. When multiple coaches are present, riders should stay between the coaches. (Reminder ideal ratio of students to coaches is 6:1 or 8:2)

### » Stopping

Plan to stop as frequently as required to monitor the group. Announce that you are stopping by calling out “Stopping” to the riders behind you. Ask them to also say, “Stopping” to relay the message back through the group. Have all riders pull off the trail and allow a clear path for other trail users.

### » Spacing

Ask riders to leave a gap between them and the rider ahead. As speed and difficulty increases, greater distance should be maintained between riders.

### » Other Trail Users

Always respect other trail users and be sure to call out and pass others at a reasonable and safe speed. Remember that coaches and students should never pass another trail user at a speed that does not allow a simple “hello and thanks” to be spoken. Always know what to do if an equestrian is encountered.

### » Separation from the group

Review the procedure if someone gets separated from the group. Ask riders to stop, move to the side of the trail and wait for a coach or group to return to them.

### » Nature, Wildlife and Plants

Explain the possibility of encountering dangerous or hazardous wildlife and plants. Do not approach or scare animals. Identify harmful plants that may be present during the ride such as poison ivy. Identify how riders can avoid high-tick areas such as high grass and inform riders when they should check for ticks after a practice.

### » Leave no trace

All riders should respect nature and not disturb plants and wildlife. Do not ride on closed or wet trails. No skidding tires. Consider other riding options if trails are wet and susceptible to damage from tires. Pack out all debris and trash that you create. Pick up and carry out what you may find left by others.

### » Route Description

Let riders know what to expect. Help them to anticipate the requirements of the ride.

### » Head count

Do not start the ride until you know how many riders you have. Do frequent head counts throughout the ride.

### During the ride

While guiding, there are a number of skills required to a safe and positive experience.

#### » Ride responsibly

Provide a positive example. Ride at a suitable pace so that the least fit rider is not over-exerting. Choose an appropriate riding line for others to follow. Consider how your actions may impact those that are watching you as well as other trail users.

#### » Stopping

One of your most important tasks as a Ride Leader is to stop frequently in safe areas. The first stop is extremely important. Within a minute of the ride beginning, the Ride Leader should stop the group to ensure that nothing has been forgotten. Often times, riders do not realize there is a problem until they start riding. Allow an opportunity to quickly resolve small concerns before getting too far into the ride. A simple mechanic adjustment or retrieving a forgotten item is not a big deal when resolved early. Later in the ride, the impact could be critical.

Consider changing the order of riders during stops. Group dynamics are highly variable and constantly changing. Don't allow weaker or less confident riders to gravitate to the back. Don't allow more confident riders to hog your attention immediately behind you. Changing the order allows for a shuffling of the group and ensures everyone has an opportunity to have a positive experience.

During each stop, be sure to "CODL" the group. **Count** to ensure all riders are present. **Observe** for behavior indicating a possible problem. **Describe** the route ahead before restarting. **Look** both ways on the trail to ensure it is safe to resume riding.

#### » Monitoring

You should constantly monitor your group so that you can manage them safely. The level of monitoring may vary based on the difficulty of terrain and skill level of the riders. Monitor riders for fatigue, overheating, fear/anxiety, dehydration and coldness. Monitor bikes for mechanical issues. Monitor the wildlife for changes in plants or animal encounters. Monitor for changing weather. Monitor student-athletes and coaches with previous injuries or medical concerns.

#### » Shoulder Checks

A shoulder check is when the Ride Leader turns his or her head to quickly observe riders behind. Shoulders checks should be performed as frequently as ten seconds or any time the trail allows for an opportunity to turn your head safely. This is a learned skills and extremely important for a Ride Leader to practice. If unable to perform shoulder checks, the Ride Leader should expect to stop more frequently to monitor the group.

#### » Communication

Once the ride begins, you are responsible for setting the tone. Call riders by name and show a sincere interest. Involve everyone. Use positive body language. Remember your role is providing a fun experience. Read your group and provide entertainment, encouragement, and information to promote a positive experience for all.

#### » Trailside repairs

As a Ride Leader, basic bike maintenance skills are required. Regardless of preparation, mechanical issues do occur periodically during rides. Expect to encounter mechanical situations and know how to perform at least simple repairs such as flat tires, loose bolts, and shifting issues.

#### » Responding to an accident

Ride Leaders are required to obtain appropriate NICA Level 2 licensure, including First Aid training to respond to a possible accident. Regardless of your training and preparation, accidents do happen. You need sufficient maturity and composure to deal with accident situations. Leadership is always needed. Substandard care is not acceptable. BE PREPARED! If no injury occurs during an accident, be sure to do a complete inspection of the rider's bike before continuing. Ensure, brakes are functioning, wheels are true, handlebars are straight, etc.

### Ride Wrap-Up

Your final task is to wrap-up the ride. Reiterate positive group experiences and achievements. Make sure everyone leaves on a good note, remembering those final positive feelings. If an incident did occur, be sure that proper reporting, including completion and submission of a NICA Incident Report is completed in a timely manner.

# SKILLS INSTRUCTION

## Ten Fundamental Elements

### » Neutral & Ready Position

These dynamic standing body positions are critical to maintaining balance and control over varied or challenging terrain.

### » Bike / Body Separation

Bike / Body separation allows the bike to move as the terrain dictates while the rider remains balanced and in control.

### » Pedal Position

Level pedals, when not pedaling, allows the rider to stay balanced on both feet. Pedal position is also involved when a rider is poised with the pedal in a power position during the approach to a challenge. The foot should be positioned on each pedal properly: on the ball of foot for clipless pedals or slightly forward for flat pedals. Lastly, the rider can properly manage balance and control by rotating the feet on the pedals with ankle deflection. Heel(s) down when braking. Heels up while climbing or performing lifting skills.

### » Eye movement

The rider's head should be up at all times with eyes scanning ahead. Scan further ahead as rider's speed increases. The rider should commit with the eyes to the chosen riding line. Also, look through corners and changes in direction. The bike follows the eyes.

### » Braking

Braking is used to control speed and come to a stop. Brakes and brake levers need to be set up and functioning properly for effective use. Braking cannot be overstated as it provides confidence and safety as a rider progresses.

### » Steering

Steering is the turning of the front wheel. When used in conjunction with Bike / Body Separation, the rider is able to maintain balance and stability while changing directions. At slow speeds, a lot of steering is used to change the direction of the bike. At high speeds, leaning the bike is used to change direction while little or no steering may be involved.

### » Speed

Many skills require the rider to be moving at an appropriate speed. Riders moving at speeds below their comfort level have difficulty with balance and stability. Riders moving at speeds above their comfort level are often out of control and risk harm to themselves or other trail users.

### » Gearing & Cadence

Gear selection must be appropriate for terrain, the skill, and the rider's speed. For skills requiring pedal strokes, gear and speed are critical to success. A rider's cadence is the revolutions per minute of the cranks. For efficiency on flat terrain, a rider uses a relatively high cadence. When climbing, the rider uses a slower cadence, which allows them to surge their speed and use momentum gained to ride over technical portions of a climb.

### » Timing & Coordination

Small errors in timing and coordination can have disastrous consequences. Timing errors are easier to correct with repeated practice. Coordination errors are more difficult and time consuming to correct. However, you should never progress a skill when there are errors in timing and coordination.

### » Pressure Control

Pressure Control is used for maximizing or minimizing traction on either tire. With small movements, riders can change the pressure from back to front to find a good balanced position on the bike. Pressure control is used at least subtly in most skills. Sometimes, pressure control is the key to success but often overlooked.

## 3 Key Essentials



These essentials are common to all skills. Therefore, make mention of them before beginning the first skill or provide a reminder before resuming instruction. They can then be stressed during observation and correction of rider skills practice.

- » Head up, eyes scanning ahead
- » Finger on each brake lever at all times
- » Level pedals, evenly weighted

## NEUTRAL POSITION

The Neutral Position is a tall and relaxed standing position on the bike used when cruising relatively easy terrain such as grass fields, wide paths, gravel roads, etc. The position can also provide a moment of rest between challenges that a rider may be navigating.

When observed, the rider should appear tall and relaxed with a slight bend in the elbows and knees while standing. The rider’s weight should be centered over the bike with level pedals.

*The goal is to maintain a relaxed position while standing and coasting, keeping equal weight on the front and rear wheels through weighting the feet.<sup>1</sup>*

**Site Selection:** Smooth, flat terrain. Use cones to provide a basic runway and turn-around point.

### Teaching Points:

- » Tall, relaxed stance.
- » Slight bend in knees and elbows.
- » Weight in the feet. “Heavy feet, light hands!”<sup>2</sup>

### Demonstrations:

- » Static: Side view standing next to bike. Body language should match the explanation.
- » Fluid: Side view. Speed is slow jogging pace.
- » Coast in a neutral position and emphasize the relaxed stance with a very slight bounce in knees and loose elbows.

**Detection and Correction of Common Errors:** Consider combining neutral position and ready position into one drill for groups beyond novice skill level.



Error Observed:	Correction:
Incorrect use of any 10 Fundamental Elements	Correct as needed
Rider too far forward or back	Stay balanced, weight in feet
Legs or arms too bent	Stand tall and relaxed
Pedals uneven	Level pedals, equally weighted

<sup>1</sup> International Mountain Bike Association (IMBA) Instructor Certification Program (ICP) Level 1-Ride Guide Manual. 2016.

<sup>2</sup> McCormack, Lee. Teaching Mountain Bike Skills. National Interscholastic Cycling Association. Race Line Publishing. 2011.

# READY POSITION

The Ready Position is a balanced standing position used to prepare for challenges, impacts and as a set-up and follow-through for many skills. This position has a dynamic range of motion during terrain changes and skills performed. The key is to remain balanced and *ready* for what is next.

When observed, the Ready Position mimics a crouched athletic stance that is used for many sports and physical activities.

*The goal is to maintain balance, maximize strength, and minimize response time through weighing of the feet and bending the elbows and knees.*

**Site Selection:** Smooth, flat terrain. Use cones to provide a basic runway and turn-around point.

**Teaching Points:**

- » Crouched athletic stance.
- » Deep bend in knees and elbows. Elbow out.
- » Weight in the feet. “Heavy feet, light hands!”

**Demonstrations:**

- » Static: Side view standing next to bike. Body language should match the explanation.
- » Fluid: Side view. Speed is slow jogging pace.
- » Approach in a Neutral Position. Transition smoothly into the



Ready Position when closest to the viewers. Then, return to Neutral Position as you ride away.

- » Mention that the Ready Position is a dynamic position. A high or low ready position may be required based on changes in terrain or skill about to be performed.

**Detection and Correction of Common Errors:** Consider combining neutral position and ready position into one drill for groups beyond novice skill level.

Error Observed:	Correction:
Incorrect use of any 10 Fundamental Elements	Correct as needed
Elbows and knees not bent substantially	Deeper crouch
Elbows down rather than out	Suggest a strong push-up posture

*Matt Gunnell, SoCall League Director, in ready position on the trail.  
Photo credit: Todd Bauer*



<sup>2</sup> McCormack, Lee. Teaching Mountain Bike Skills. National Interscholastic Cycling Association. Race Line Publishing. 2011.

# BRAKING

Braking is used to reduce speed, maintain speed while descending or bring the bicycle to a controlled stop. Braking is used in varying amounts and combinations to control the bicycle without skidding.



*The goals are to utilize both brakes in a safe, controlled manner for reducing speed while riding and to come to a complete stop from a range of speeds using proper technique.*

Consideration should be made for those with varying technologies of brakes (ie. disc vs. rim) and discrepancies in setup. Proper brake lever alignment is critical to braking and the success of many other skills. Adjust the position, angle, and reach of each brake lever to best suit the type of brake and rider. One-finger braking is preferred. Two is acceptable for smaller riders or lesser brakes.

**Site Selection:** Smooth, flat terrain. Use cones to provide a basic runway and turn-around point.

**Teaching points:**

- » Ready Position.



- » Apply appropriate pressure to brake levers (Toothpaste analogy).
- » Forward foot, heel down.
- » Bracing leg.

**Demonstrations:**

- » Static: Side view standing next to bike.
- » Fluid: Side view. Speed is slow jogging pace.
- » Come to a controlled stop while providing clear use of heel drop and bracing leg. Demonstrate how weight shifts down and back to counteract the forces of braking.

**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Having trouble stopping	<ul style="list-style-type: none"> <li>● Brakes functioning properly?</li> <li>● Brake levers set up properly?</li> </ul>
Skidding	<ul style="list-style-type: none"> <li>● Adjust pressure to front/rear brake levers</li> <li>● Exaggerate heel drop and weight shift</li> </ul>
Jerky braking	<ul style="list-style-type: none"> <li>● Reinforce modulation of brakes (toothpaste analogy)</li> </ul>
Body weight going forward	<ul style="list-style-type: none"> <li>● Exaggerate heel drop and weight shift</li> </ul>

Kimberly Seay, NICA Arkansas Coach Supporter, demonstrating one finger braking. Photo credit: Todd Bauer



## BIKE/BODY SEPARATION - Side to Side

Side to side bike/body separation is critical to riding a specific path while maintaining horizontal balance and stability. Examples are riding narrow trails or singletrack, cornering, or dodging obstacles encroaching on the handlebars, such as trees and other riders.

*The goal is to lean the bike from one side to the other while maintaining a balanced ready position, showing appropriate use of all other fundamental elements.*

**Site Selection:** Smooth, flat terrain. Use cones to provide a basic runway and turn-around point.

### Teaching points:

- » Low Ready Position with wide knees.
- » Hinge at the elbows.
- » Lean bike without steering.
- » Keep torso still.

### Demonstrations:

- » Static: Front view standing next to bike.
- » Fluid: Front view. Speed is slow jogging pace.
- » Coast straight towards your participants while leaning the bike from side to side. You may need to do this multiple times to allow everyone in a large group to see a front view.



### Detection and Correction of Common Errors:

Error Observed:	Correction:
Not riding in a straight line	<ul style="list-style-type: none"> <li>● Riding too slowly?</li> <li>● Turning shoulders or steering instead of leaning bike.</li> <li>● Center weight over bike</li> </ul>
Moving hips or chest	<ul style="list-style-type: none"> <li>● Keep torso still. Lean bike by hinging at elbows</li> </ul>
Not leaning much	<ul style="list-style-type: none"> <li>● Widen knees, lower seat</li> </ul>

## BIKE/BODY SEPARATION - Forward & Back

Forward and back bike/body separation are used to maintain vertical balance and stability while riding on any type or measure of incline or decline - typically climbing or descending. Forward bike/body separation is used for inclines. The back position is used for declines.



*The goal is to move between a forward and a back position while showing appropriate use of all other fundamental elements.*



**Site Selection:** Smooth, flat terrain. Use cones to provide a basic runway and turn-around point.

### Teaching points:

- » Low Ready Position.
- » Move the body forward and back.
- » Torso moves on a level plan.

### Demonstrations:

- » Static: Side view standing next to bike.
- » Fluid: Side view. Speed is slow jogging pace.
- » Coast in a ready position. Slide forward until the hips are in front of the saddle and the chest is over the handlebars, then slide back on an even plane so the hips are behind the saddle.
- » Briefly pause in between the front and back positions in a balanced ready position.



*Minnesota coach supporter Jackie Karsten demonstrates body bike separation - further back position. Photo Credit: Minnesota High School League Demo Team*

### Detection and Correction of Common Errors:

Error Observed:	Correction:
Rider having trouble with balance	<ul style="list-style-type: none"> <li>• Lower &amp; more stable Ready Position</li> <li>• Increase speed if required</li> </ul>
Rider goes too far back, locks out arms	<ul style="list-style-type: none"> <li>• Keep a slight bend in arms for horizontal stability</li> </ul>
Shoulders high or standing too tall	<ul style="list-style-type: none"> <li>• Bend arms to lower chest or bend knees to lower hips.</li> </ul>

# INTRODUCTION TO CORNERING

**Cornering is used to maintain balance, momentum, and speed while making dramatic changes in direction. Often used when riding on flat or descending terrain. Cornering is a complex skill with numerous teaching points and progressions. For that reason, we offer an introduction at this first level of instruction.**



While the rider may STEER the the bike through tight turns at slow speed, cornering involves leaning the bike. When cornering, the rider must LEAN the bike in the intended direction. This causes the bike to arc in that direction. The rider remains in a low Ready Position with equally weighted pedals to provide stability and distribute body weight evenly over the front and rear wheels.

*The goal is to maintain balance while making dramatic changes in riding direction.*

**Site Selection:** Smooth, flat terrain or gentle downgrade. Use cones to create a slalom course and right-angle turn.

**Teaching points:**

- » Low Ready Position.
- » Lean the bike in the direction of turn while maintaining level pedals.
- » Look in direction of turn.

**Demonstrations:**

- » Static: Front view standing next to bike.
- » Fluid: Front view. Speed is jogging pace.
- » Coast straight towards your participants while leaning the bike from side to side. Allow the bike to create a gentle curving path back and forth while your torso remains still. Do the same while navigating a line of cones creating a slalom.

- » Have participants near the end of a right-angle turn and face you. Coast through turn, demonstrating teaching points. Hold the bike in a leaning position as you travel through the arc of turn.

**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Not or no enough bike lean.	<ul style="list-style-type: none"> <li>● Reduce speed to provide confidence</li> <li>● return to Side to Side BBS drills</li> </ul>
Wide cornering	<ul style="list-style-type: none"> <li>● Lean more</li> <li>● Slower speed</li> <li>● Likely too far back. Move forward, more over front wheel</li> </ul>
Difficulty maintaining balance	<ul style="list-style-type: none"> <li>● Stress level pedals, equally weighted</li> </ul>

Idaho Coach Supporter, Amanda Carey practices cornering on short course. Photo Credit: Minnesota High School League Demo Team



# SHIFTING

Shifting is used to maintain an efficient and comfortable pedaling cadence while riding over varied terrain. When cadence is too low, more force is required to pedal which can cause early or excessive fatigue. It can also create unnecessary strain on the knee joint. When cadence is too high, the rider is unable to accelerate. As an instructor, we want to provide guidance on how and when to shift the gears. Use terminology such as Easier/Harder gear because they correspond to sensations that the rider will feel when they shift.

*The goal is to help the rider understand how shifting gears affects comfort and efficiency over varying terrain.*

**Site Selection:** Start with the basic cone configuration on smooth, flat terrain. Progress to slightly sloping grass area offering varying resistance. Use cones to create a large rectangle directing riders both up and down the sloped terrain.

**Teaching points:**

- » Surge.
- » Soft pedal.
- » Shift.
- » Resume (continue pedaling).

**Demonstrations:**

- » Fluid: Side view. Speed is slow jogging pace.
- » Exaggerate the surge with appropriate body language.
- » Maintain quiet shifting as you shift one gear at a time.

**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Noisy shifting	<ul style="list-style-type: none"> <li>● Are derailleurs adjusted properly?</li> <li>● Bigger surge to provide more momentum</li> <li>● Shift earlier, before resistance is too high.</li> <li>● Soft pedal until shift has completed</li> </ul>



*Joel Woodward, Minnesota Coach Supporter, demonstrates shifting.*

# SEATED CLIMB

Seated climbing is often the most efficient climbing method as the majority of the rider’s body weight is supported by the bike seat. The upper body can remain relaxed with minimal movement. Pedaling power is provided by muscles in the lower body.

*The goal is to climb easy to moderate inclines efficiently while in a seated position.*

**Site Selection:** Smooth, gentle inclined terrain.

**Teaching points:**

- » Shift gears.
- » Shoulders forward.
- » Slide hips forward as terrain steepens.
- » Low Ready Position with elbows out for technical terrain.
- » Low Ready Position with elbows in for power on non-technical terrain.



**Demonstrations:**

- » Static: Revisit forward & back bike/body separation.
- » Fluid: Side view. Speed is slow jogging pace.
- » Ride up an easy incline while exaggerating a forward body position.

**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Front wheel lifts off ground	<ul style="list-style-type: none"> <li>● Move hips and shoulders forward</li> <li>● Bend arms and lower chest</li> <li>● Use harder gear</li> </ul>
Front wheel wanders	<ul style="list-style-type: none"> <li>● Rider is pulling unevenly on bars</li> <li>● Continue to look up and ahead</li> </ul>
Loss of traction at rear wheel	<ul style="list-style-type: none"> <li>● Smooth and even pedal stroke</li> <li>● Easier gear</li> </ul>



# STANDING CLIMB

The standing climb is used to accelerate on climbs that are not technical or loose. Standing consumes more energy as the rider must now balance and support the weight of the entire body. The standing climb is also used as a break during long seated climbs, to stretch the muscles, or to burst over the crest of a hill.



*The goal is to develop good timing and coordination, when rocking the bike from side to side, during a standing climb.*

**Site Selection:** Short, steep climbs, road or smooth packed dirt.

**Teaching points:**

- » Stand up.
- » Power pedal.
- » Pull.

**Demonstrations:**

- » Fluid: Front view from top of climb.
- » Ride up a steep incline while exaggerating the bike rocking side to side.

**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Bike is steering from side to side	<ul style="list-style-type: none"> <li>● Coordinate the timing of the pull and push</li> <li>● Pull up and side to side. Not back.</li> </ul>
Rear tire loses traction	<ul style="list-style-type: none"> <li>● Shift weight back</li> <li>● Check gear selection</li> </ul>

# CROUCHED CLIMB

The crouched climb is used to navigate short portions of technical climbs. The hips are hovering above the saddle and shoulders are above the handlebars. This position allows for quick forward and back bike/body separation to maintain balance and traction. Crouched climbing is the most strenuous method of climbing but very effective in technical terrain.

*The goal is to develop good bike/body separation to maintain balance and traction while climbing technical terrain.*

**Site Selection:** Rough, uneven terrain, of moderate to steep incline.

**Teaching points:**

- » Shoulders low.
- » Elbows out.
- » Hovering above saddle.

**Demonstrations:**

- » Fluid: Side view. Speed is slow jogging pace.



**Detection and Correction of Common Errors:**

Error Observed:	Correction:
Can't steer or loses balance	<ul style="list-style-type: none"> <li>● Check for balanced position</li> <li>● Eyes scanning ahead focused on riding line.</li> <li>● Deep crouch with shoulders low.</li> <li>● Are hips off the saddle?</li> </ul>
Rear tire loses traction	<ul style="list-style-type: none"> <li>● Shift weight back</li> <li>● Check gear selection</li> </ul>

These are the NICA Guidelines on how to instruct On-the-Bike Skills for coaches in your league.

**The rest is mostly up to you! Unlock your potential with lots of practice working toward proficiency in the areas presented in this manual.**

# Appendix A

# NICA

## ON-THE-BIKE SKILLS

### Trainer Field Notes

#### Method for Presenting Each Skill

- Name the skill
- Explain where, when, why it is used
- Explain teaching points with static demonstration
- Provide a moving demonstration
- Prompt for questions
- Have students practice and provide feedback to them
- Prompt for remaining questions
- Offer progressions if appropriate

#### 3 Key Essentials

- Level Pedals (Athletic Stance)
- Finger on each brake lever
- Head up, eyes scanning ahead

#### Ten Fundamental Elements

- Neutral and Ready Position
- Bike / Body Separation
- Pedal Position
- Eye Movement
- Braking
- Steering
- Speed
- Gear and Cadence
- Timing and Coordination
- Pressure Control

Skill	Key Points	Progressions & Activities
<b>Neutral Position</b>	<p><b>Where:</b> Cruising Easy Terrain</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Tall &amp; Relaxed</li> <li>● Slight bend in Elbows and Knees</li> <li>● Heavy Feet, Light Hands</li> </ul> <p><b>Demonstration:</b> Walking/Jogging speed, Side view</p>	

Skill	Key Points	Progressions & Activities
<p><b>Ready Position</b></p>	<p><b>Where:</b> Technical Terrain or Feature</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Crouched/Low</li> <li>● Deep Bend in Elbows &amp; Knees</li> <li>● Elbows Out for stability</li> <li>● Heavy Feet, Light Hands</li> </ul> <p><b>Demo's:</b> Static Push-Up drill (elbows in vs. elbows out) Static Bike Hold (to feel heavy feet light hands) Walking/Jogging speed, Side view</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Low Ready Position</li> <li>● High Ready Position</li> <li>● Seated Ready Position</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Slow Race</li> </ul>
<p><b>Braking</b></p>	<p><b>Where:</b> Slowing or Stopping without Skidding</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Single Finger (when possible)</li> <li>● Apply both brakes appropriately (toothpaste analogy)</li> <li>● Drop Heel(s) to create bracing leg.</li> </ul> <p><b>Demonstrations:</b> Static - Modulation Static - Heel drop for bracing leg (hold stem and push rider forward with arm on their low back) Rolling - Fast Walk/Jogging speed, Side view</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Stop using only one brake then the other; Brake awareness</li> <li>● Stop at specific point; timing</li> <li>● Increase Speed</li> <li>● Descending</li> <li>● Pressure Control</li> </ul> <p><b>Activities:</b> Red Light, Green Light</p>
<p><b>Bike/Body Separation Side to Side</b></p>	<p><b>Where:</b> Cornering, Straight Lines, Tree Dodge</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Low Ready Position</li> <li>● Wide Knees &amp; Elbows Out</li> <li>● Hinge at the elbows (windshield wipers)</li> <li>● Lean the Bike</li> </ul> <p><b>Demonstrations:</b> Static - Hold Stem while simulating side to side Rolling - Jogging Speed, Front view</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Ride on line or skinny</li> <li>● Change speed/frequency of bike lean</li> <li>● Dodge the coach standing near the skinny</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Slalom with cones</li> <li>● Dual slalom race</li> </ul>

Skill	Key Points	Progressions & Activities
<b>Bike/Body Separation Forward &amp; Back</b>	<p><b>Where:</b> Climbing &amp; descending</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Low Ready Position</li> <li>● Move BIKE Forward &amp; Back</li> <li>● Shoulder &amp; Hips move on even plane</li> <li>● Exaggerate the moves</li> </ul> <p><b>Demonstrations:</b> Static - Picnic Table Hold (one wheel on feature, hold bike, allow rider to find balance and release hands) Rolling - Jogging speed</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● On flat ground</li> <li>● Add timing element</li> <li>● Add frequency</li> <li>● Add terrain or ramps</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Pump Track</li> </ul>
<b>Intro to Cornering</b>	<p><b>Where:</b> To change direction</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● <b>Low</b> Ready Position</li> <li>● <b>Look</b> in direction of turn</li> <li>● <b>Lean</b> the bike in direction of turn</li> </ul> <p><b>Demonstration:</b> Right angle turn, front view</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Speed, turn frequency</li> <li>● Hip rotation</li> <li>● Foot position</li> <li>● Pressure Control</li> <li>● Line choice</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Slalom</li> <li>● Descending slalom</li> </ul>
<b>Shifting</b>	<p><b>Where:</b> To maintain desired cadence and pedaling efficiency on varied inclines/declines</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● <b>Surge</b>, pedal forcefully forward</li> <li>● <b>Soft Pedal</b>, lighten force on pedals</li> <li>● <b>Shift</b>, continue soft pedaling until chain moves</li> </ul> <p><b>Demonstration:</b> Side view, jogging speed, quiet shifting</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Shift through all gears</li> <li>● Shift without looking down</li> <li>● Shift on command</li> <li>● Shift on gentle hill</li> <li>● With chain in middle of cassette, shift front derailleur</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Oval on sloped grass</li> <li>● Granny gear, biggest gear races</li> </ul>

Skill	Key Points	Progressions & Activities
<p><b>Seated Climbing</b></p>	<p><b>Where:</b> To climb easy to moderate slopes efficiently in a seated balanced position.</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Shift gears</li> <li>● Shoulders forward</li> <li>● Hips forward as terrain steepens</li> <li>● Elbows out when technical</li> <li>● Elbows in when non-technical to tug on bars</li> </ul> <p><b>Demonstration:</b> Side view, walking speed</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Steeper climb</li> <li>● Longer climb</li> <li>● Shift gears while climbing</li> <li>● Crouched and Standing climbing</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Oval on a grassy hillside</li> <li>● Hill repeats on a dirt road or trail</li> </ul>
<p><b>Crouched Climbing</b></p>	<p><b>Where:</b> As required for steepness of grade. To navigate obstacles using Bike/Body Separation.</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Low Ready Position</li> <li>● Move hips forward</li> <li>● Hover over seat</li> </ul> <p><b>Demonstration:</b> Side view, walking speed</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Steepness of climb</li> <li>● Reduce speed</li> <li>● Add obstacle</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Oval on a grassy hillside</li> <li>● Hill repeats on a dirt road or trail</li> </ul>
<p><b>Standing Climb</b></p>	<p><b>Where:</b> To rest muscles used while seated climbing on a long climb. When traction is good. To utilize body weight to accelerate.</p> <p><b>Teaching Points:</b></p> <ul style="list-style-type: none"> <li>● Ready Position</li> <li>● Powerful pedal strokes</li> <li>● Pull with hands</li> </ul> <p><b>Demonstration:</b> Side view, fast walking speed</p>	<p><b>Progressions:</b></p> <ul style="list-style-type: none"> <li>● Change gears</li> <li>● Increase steepness</li> </ul> <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li>● Oval on a grassy hillside</li> <li>● Hill repeats on a dirt road or trail</li> </ul>



## Appendix B

# NICA

## Common Cone Layouts

### Neutral & Ready Position, Bike & Body Separation, and Braking



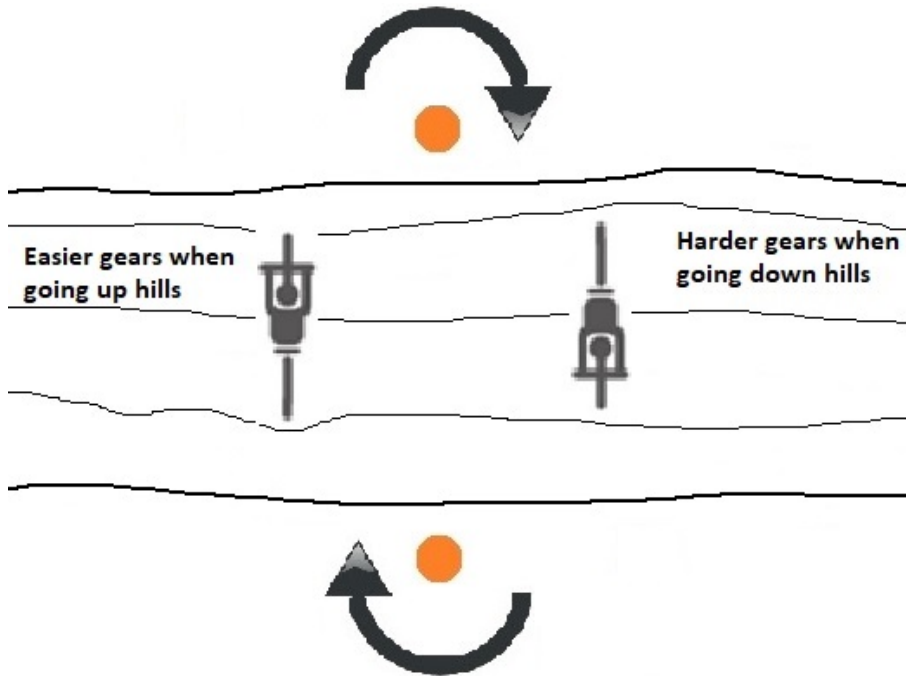
### Intro to Cornering



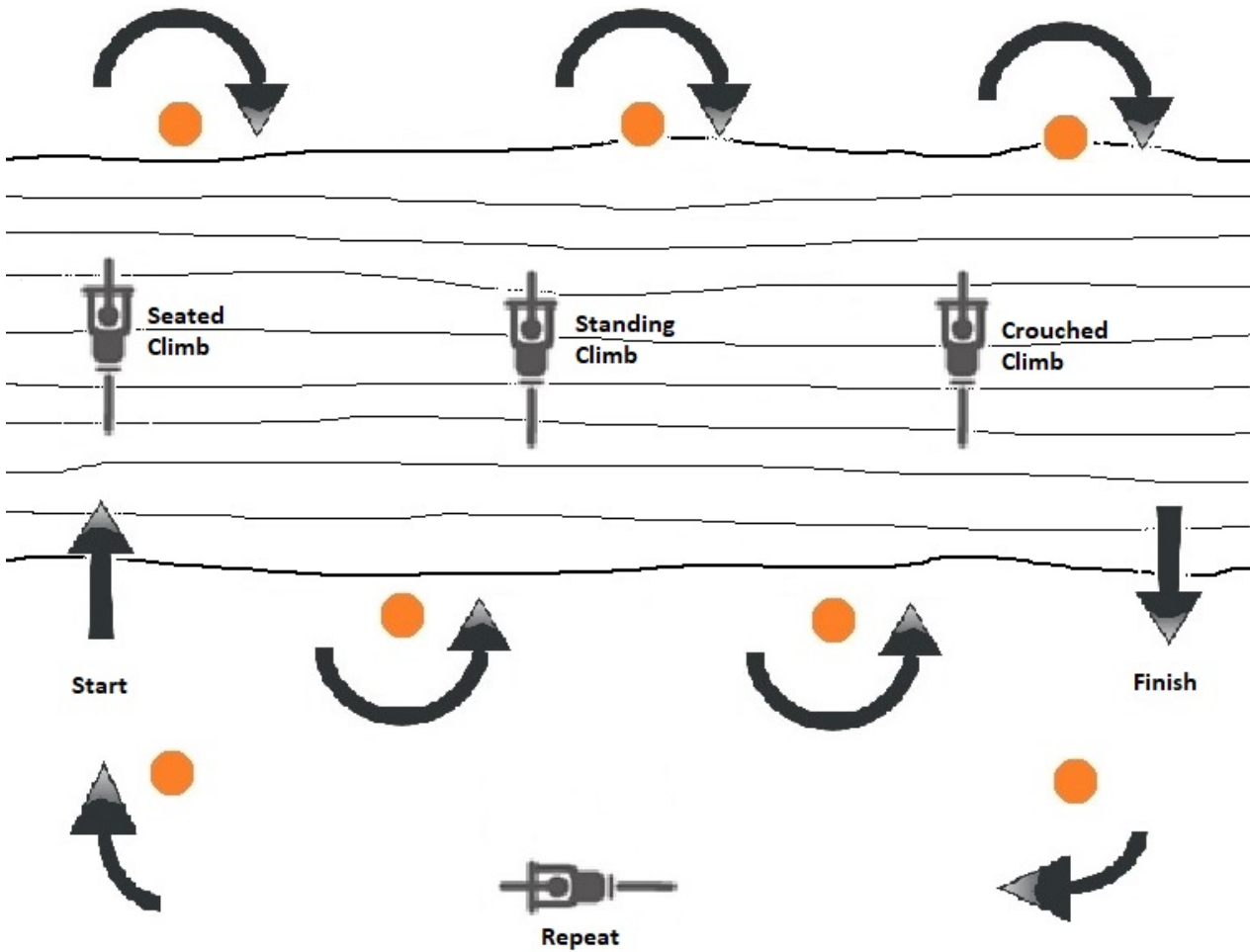
### Intro to Cornering (Progression)



**Shifting**



**Climbing**





## Appendix C



# Student-Athlete Evaluation

Athlete Name: \_\_\_\_\_ Date: \_\_\_\_\_

Evaluated By: \_\_\_\_\_ Location: \_\_\_\_\_

Criteria			Comments
Physical, Psychological, Social Preparedness			
Skill Development	Grade	Approved Trail Difficulty	Comments
Neutral / Ready Position			
Braking			
Bike Body Separation Side to Side			
Bike Body Separation Forward & Back			
Intro to Cornering			
Shifting			
Seated Climbing			
Crouched Climbing			
Standing Climb			

## Appendix D



# Coach Evaluation

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Location: \_\_\_\_\_

Evaluated By: \_\_\_\_\_

	Site Considerations	Comments/Notes
	Location appropriate?	
	Cone/feature layout?	
	Surrounding Distractions?	
	Participant comfort and view?	
	Communications Skills	Comments/Notes
	Communication clear and appropriate? Volume?	
	Positive and encouraging feedback?	
	Good Listening Skills, Use of eye contact?	
	Professional, authoritative, confident, appropriate?	
	Skill Instruction	Comments/Notes
	<b>Neutral / Ready</b>	
	Correct Explanation?	
	Teaching Points?	
	Correct Demo?	
	Practice Period?	
	Detect errors, provide feedback?	
	Answer Questions?	