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SoCAL
LEAGUE

TEACHING INTERMEDIATE BICYCLE SKILLS

Study Guide

Introduction

Mountain bike coaching is significantly more difficult than other sports. A basketball coach can arrive at practice with little more than a ball and whistle. They have an indoor or outdoor playing facility with a proper playing surface. Painted boundary lines and baskets with consistent size and height. A quick online search will produce hundreds of drills to be done with athletes to promote fun and learning. Nearly all interscholastic sports have a similar infrastructure to support their coaches and athletes.

Unlike the basketball court, our mountain biking environment is notably inconsistent and may change daily. Teaching mountain bike skills requires a coach to be creative, adaptive, and improvisational. In this study guide, we will review appropriate preparation, terminology, and techniques to teach student-athletes how to enjoy cycling for life.

The Mountain Bike Classroom

Coaches are often challenged to find an appropriate teaching space or venue. Trails are not often appropriate for teaching as the space may be limited, variables uncontrolled, and may inhibit other trail users. Experienced coaches see a grass field as a blank canvas, allowing them to design and create a learning environment that matches the skills being taught and the experience level of the student-athletes.

A great teaching space has the following characteristics: An open area at least the size of a basketball court (larger for more teaching groups). A grass or dirt surface with low rolling resistance. A slight grade allows riders to roll through the practice area with minimal pedaling. An adjacent small hill for climbing and descending skills. Minimal visual or audible distractions are nearby.

The Coach's Toolbox

Although bike playgrounds and pump tracks are being added to many communities, coaches often must be creative as they set up their learning space. A small collection of training aids can be easy to find at a relatively low cost. In addition to the typical cones and pin flags, consider items that mimic elements we often find on the trail.

Tennis balls can be rocks. Segments of wood or a pool noodle are roots or logs.

Some coaches also utilize portable ramp features to simulate more ambitious riding scenarios. These can be made using products from local home improvement stores. See the appendix below for further details about what is required to build these ramps.

Strategies for Teaching Skills

Below are common strategies and principles for teaching skills, assessing rider competency, and preparedness to ride on trails.

Method for teaching each skill

- **Name the skill to be instructed.**
  Announcing the name of the skill prompts student-athletes to pay attention and creates a new starting point if moving on from a previous skill.

- **Describe when, where, and why the skill is used.**
  Provide an understanding of the skill and when/where/why it is commonly used.

- **Provide teaching points along with a static demonstration.**
  Provide clear and concise keywords indicating how the skill is performed. Keywords for each skill are provided below. Simultaneously, use your body and bike to create a static demonstration that mimics those keywords. This combination of auditory and visual explanations will increase understanding and comprehension.

- **Demonstrate the skill.**
  Perform a complete moving demonstration of the skill.

- **Prompt for any questions.**
  Student-athletes may not yet have a complete understanding of what is expected of them. Allow an opportunity to answer questions they may have.

- **Allow for practice and progressions.**
  Allow the student-athletes to practice while you provide feedback. Offer progressions when appropriate.

- **Review the lesson.**
  Review the skill and prompt student-athletes to answer a question about the skill. A brief quiz is a great way to ensure they comprehend the skill and are ready to move on.

Error Observation, Detection, and Correction

A coach's ability to observe and identify rider errors is a practiced skill. How we deliver feedback to student-athletes can create a lasting impression, both good and bad. Do not announce what they are doing wrong. Lead with empathy and encourage them with tips to help them succeed. They may not remember what you do or say. They will remember how you made them feel. Leave them feeling empowered and energized to continue learning and practicing.

Develop a system of observation that helps you to identify errors quickly. Become familiar with keywords, body movements, common errors, and corrections for each skill. This will aid your ability to keep practice sessions moving seamlessly and provide the highest quality learning environment.

Note that student-athletes will improve simply with repeated practice attempts. Immediate criticism or feedback is not always best. Focus instead on the improvement process. Encourage them to continue trying as you determine how best to help. They often figure it out on their own and will enjoy the challenge and accomplishment. Although we may want to immediately step in and fix things, pause and allow them to problem solve and learn. Then, celebrate with them.

Ten Fundamental Elements

The ten fundamentals are the foundation of all mountain bike skills. They provide guidance as you observe, identify rider errors, and provide feedback. Knowing how these elements are interrelated when performing skills will help you to guide your student-athletes to a higher level of success on the bike.

- **Neutral & Ready Position**
  These dynamic standing 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, allow the rider to stay balanced on both feet. Pedal position is also involved when the rider is poised with a pedal in the power position during the approach to a challenge that requires a quick pedal stroke. Each foot should be positioned properly on the pedal: On the ball of the foot when clipped in. Slightly forward of the ball of the foot when using flat pedals.
- **Eye Movement**
  The rider's head should be up with eyes always scanning ahead. Scanning further ahead as speed increases. Identify obstacles to be avoided and focus on a path to success.
- **Braking**
  Braking is used to control speed and/or come to a stop. Braking cannot be overstated as it provides confidence and control as riders progress.
- **Steering**

Steering is the turning of the handlebars and front wheel. When used with bike/body separation, the rider can maintain balance and stability while changing direction. At slow speeds, a lot of steering is required. At higher speeds, leaning the bike changes direction while minimal steering is involved.

- **Speed**
  Many skills require the rider to travel at an appropriate speed. At slow speeds, it may be difficult to maintain stability, balance, and control. Excessive speeds reduce reaction time and create higher levels of risk and consequence.
- **Gearing & Cadence**
  Gear selection must be appropriate for the terrain, the skill, and the rider's speed. For skills requiring pedal strokes, gear selection may be critical.
- **Timing & Coordination**
  Small errors in timing can have disastrous consequences. Timing errors are easy to correct with repeated practice. Coordination errors may be more difficult to correct. However, you should never progress a skill when there are errors in timing and coordination.
- **Pressure Control**
  Pressure control is pushing down or unweighting the bike through the hands and feet. Pushing down may be used to increase traction when braking or cornering. Pushing down quickly and forcefully is an early step in many wheel lifts. Conversely, the rider can unweight the bike as they are about to hit an obstacle, such as a root or rock, to minimize the impact. Pressure control is the key to success in many skills but is often overlooked.

Intermediate Skills

Ready Position - Progression

Tall & Low Ready Position

When riding over more challenging terrain, we often must adjust our ready position to better prepare for what is next. A tall ready position when the bike is about to come up toward us. Conversely, a low ready position when the bike is about to go down off a ledge or into a depression.

- **Tall Ready Position when going up obstacles**

- **Low Ready Position when going down obstacles**

Ready Position - Progression Foot Wedge

The foot wedge is the dynamic change in foot angle while pushing into the pedals. This is used to keep feet in place on the pedals while the bike is bouncing rapidly. It is also used to maintain balance and body position over the center of the bicycle.

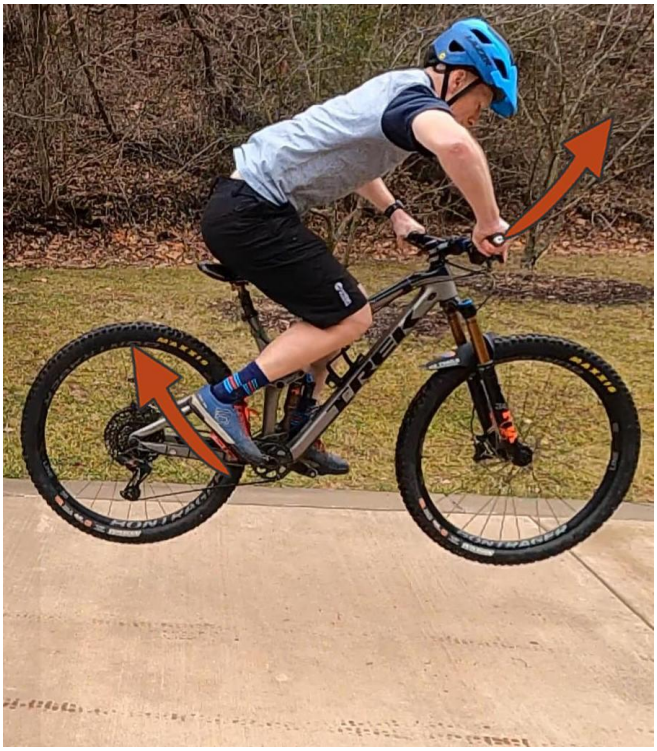
- **The heel of the front foot down**
- **Toes of the rear foot down**
- **Push forward and back through feet**

Ready Position - Progression

Body Wedge

The body wedge is used to maintain balance and body position while lifting the bike. This is used primarily when doing Level Lifts and Basic Rear Wheel Lifts. This is especially useful when using flat pedals.

- **Hands pushing forward**
- **Both feet pushing back**



Braking - Progressions

Building upon the essential skills, we can add additional elements to brake more quickly or at faster speeds. We add pressure control and push down

through the feet to increase traction between the tires and the ground. Additionally, we move hips back and extend arms to offset the increased forces of braking

- Ready Position
- Apply both brakes evenly
- Drop heel of front foot for bracing
- **Drop hips down and back as required**

Intermediate Cornering

Building upon the essential skills we can add additional elements to Cornering. As we lean the bike more, we can twist our hips in the direction of the turn. At the same time, counter-balance keeps the body horizontally centered over the bike.

- Low Ready Position
- Look where you want to go
- Lean bike in the direction of turn
- **Twist hips**
- **Counter-balance**

Ratcheting

Ratcheting is pedaling with only partial pedal strokes. The rider pedals forward only a portion of the rotation to accelerate. Then, rotates the cranks back to bring their foot back up to a power position to repeat. This is used to avoid hitting obstacles such as rocks. It is also used to maintain balance during slow-speed skills more easily. Ratcheting is often used in combination with other skills.

- **Tall Ready Position**
- **Slightly weighted hands**
- **Partial backpedal & pedal forward**

Straight Line Riding

Used to ride narrow paths or elevated features.

- **Tall Ready Position**
- **Focus ahead**
- **Side to Side Bike / Body Separation**

Trackstand

The trackstand is used to pause on the trail. It may be used as you observe an area to be ridden and decide where to go. Also, to wait as other riders clear the path ahead. Although originating on the cycling velodrome, this is a handy skill for mountain bikers.

- **Tall, weighted hands**
- **Turn handlebars uphill as you stop**
- **Vary the pressure on the front pedal**
- **Bike / Body Separation**

Rock Dodge

The rock Doge is used to avoid hitting obstacles with either wheel while making tight turns. This is especially helpful when riding slowly on switchback turns, as hitting something will likely cause the bike to stop or the rider to lose balance.

- **Tall Ready Position**
- **Steer around object**
- **Rear wheel awareness**

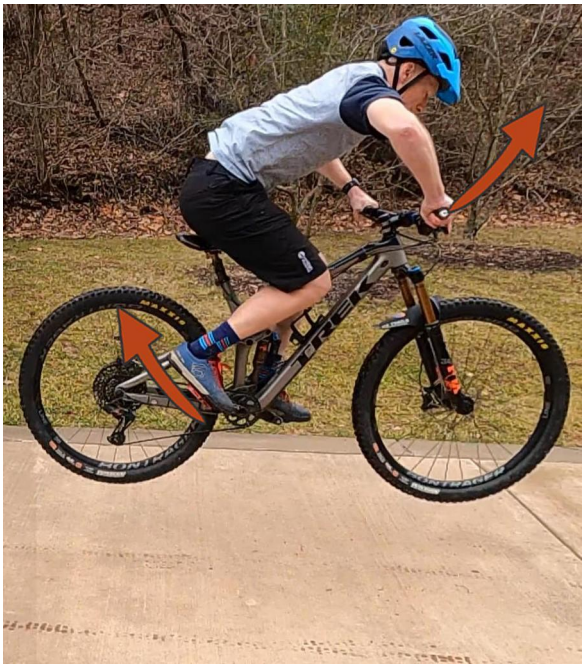
Switchback Turns

Trails that traverse hillsides often change directions. Where the trail turns and switches direction is called a switchback. These tight turns often also include an element of climbing or descending, making them especially challenging. More attention is paid to the path to make the turn as wide as possible. When going uphill, the slow speed resembles a tight turn. When descending with adequate space, we can lean the bike and use cornering technique. Therefore, one of the keywords is Bike / Body Separation, as required.

- **Choose path**
- **Focus through turn**
- **Bike / Body Separation as required**

Level Lift

The Level Lift is raising both wheels off the ground simultaneously. This is used at a relatively high speed to avoid hitting small obstacles like roots or over narrow bodies of water.



- **Load**
- **Explode**
- **Body Wedge**

Basic Front Wheel Lift

The Basic Front Wheel is one of a few ways to lift the front wheel. It is often used at a moderate speed to get up and onto ledges or obstacles.

- **Load through feet**
- **Explode**
- **Pull with hands, bend elbows**

Basic Rear Wheel Lift

The Basic Front Wheel is used to lift or unweight the rear wheel. It is often used at a moderate speed after a front wheel lift to avoid an impact at the rear wheel.

- **Load through feet**
- **Explode**
- **Body Wedge and lift feet**

Roll Down

The Roll Down is used to navigate ledges, steep rock faces, or small drops. Often a slow-speed skill in which wheels stay on the ground as the rider navigates a technical challenge.

- **Low Ready position**
- **Look**
- **Extend Arms**
- **Return to the Ready Position**

Appendix A - Risk Management Concerns

It is always best to teach and practice skills in a controlled environment before progressing to the trail.

Intermediate Cornering

Do not let riders progress to a higher speed before using proper technique. Riders should display proper Low, Look, Lean technique before adding twist and counterbalance.

Trackstand

The trackstand is far easier to learn when using flat pedals. Riders who are clipped in are often anxious about being able to unclip and avoid a fall. Riders who are clipped in should practice only on soft surfaces such as grass.

Basic Front Wheel Lift

The rider should be bending their elbows and bringing the handlebars towards their chest. The rider remains centered and balanced on the bike. Extending the arms and leaning back is a Manual Front Wheel which is taught later.

Basic Rear Wheel Lift

Ensure that the rider is not moving excessively forward while performing the Basic Rear Wheel Lift. The rider should bend the knees and bring the rear of the bike up instead of moving their body forward. Moving forward makes it easier to lift the rear of the bike but also may cause the rider to fall forward or crash.

Level Lift

Promote good Bike / Body Separation. The rider should bend the elbows and knees and lift the bike up towards them. Riders may spring up with straight arms and legs. This higher position is less stable and may lead to a crash.

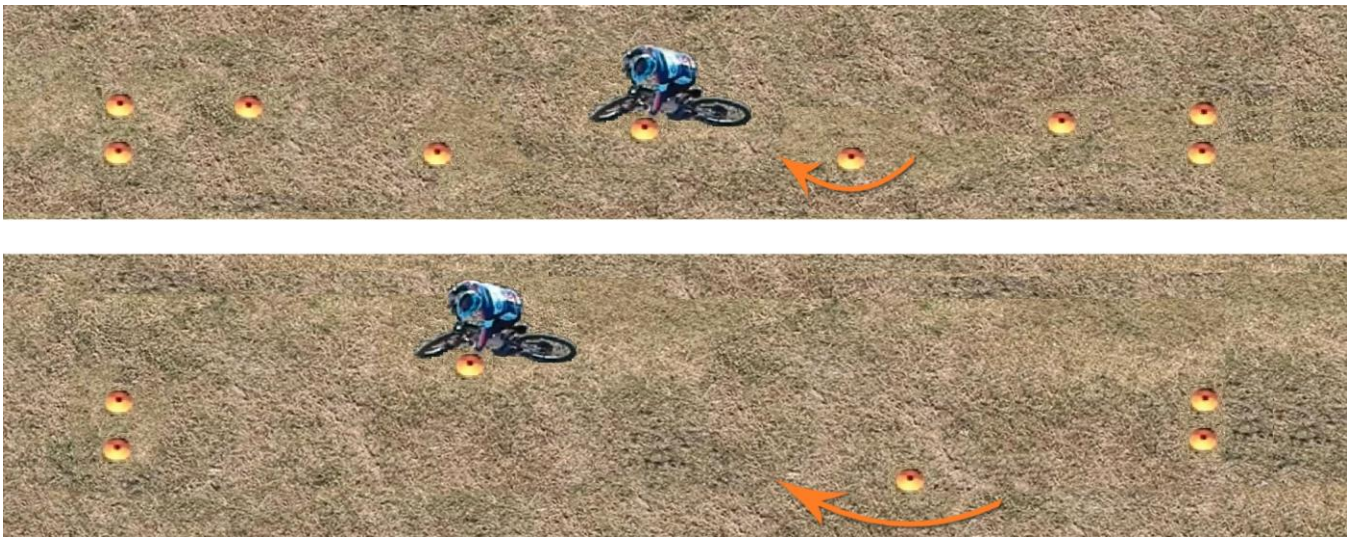
Roll Down

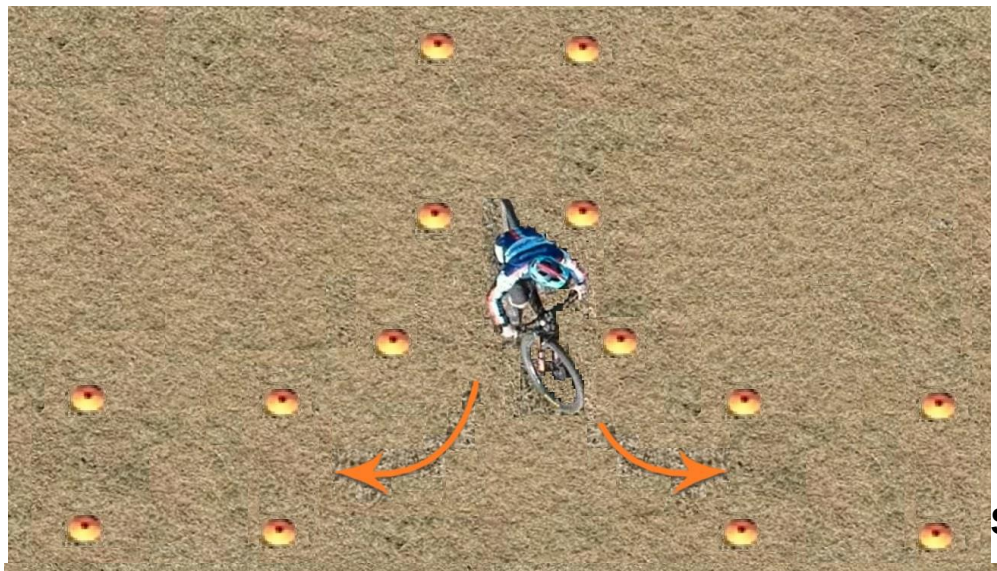
Revisit the Low Ready Position and Forward & Back Bike/Body Separation before beginning the Roll Down. The roll down should be progressed slowly. Riders unable to get low during the approach may get pulled forward as the front wheel rolls down.

Appendix B - Standard Cone Layouts

Ready Position, Braking, Ratcheting, all wheel lifts

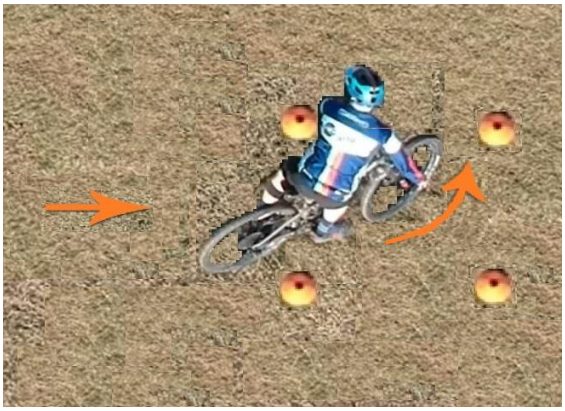
Intermediate Cornering





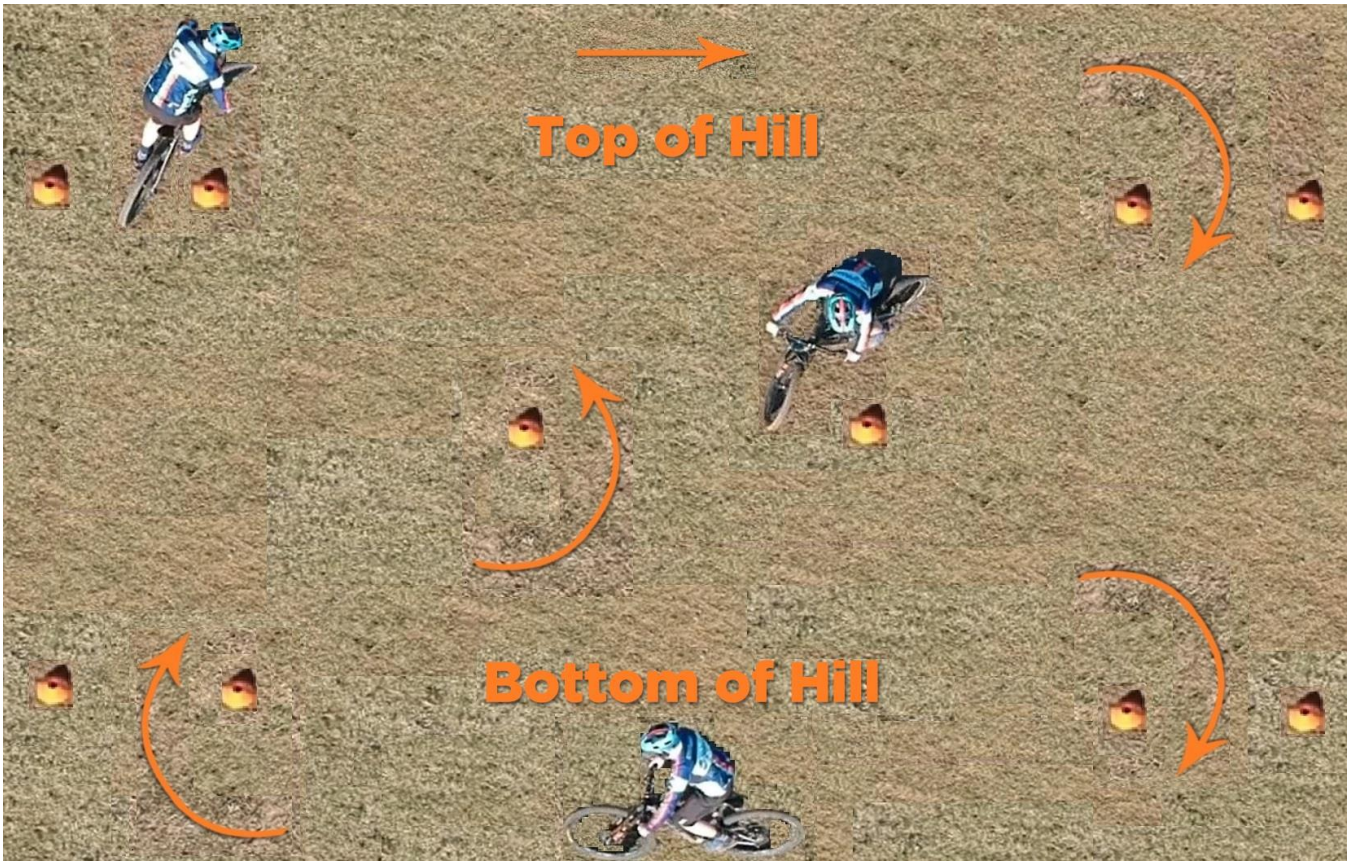
Straight Line Riding

Trackstand



Rock Dodge

Switchback Turns



Roll Down

Appendix C - Portable Skills Features

Use	Description	Lowe's Item #	Home Depot SKU #	Price (Approx.)
Risers	Wood Sawhorse 21-in W x 29-in H (cut legs to 15" high)	194254	378739	$23.98 each
Ramp/Platform	Plywood 23/32-in x 4-ft x 8-ft (cut into quarters)	12235	166057	$55.98 (4' x 8')
L Bracket	Simpson Strong-Tie 12-Gauge Steel Angle	63532	590007	$3.48 each
Bolt	Zinc-Plated Coarse Thread Hex Bolt	63324	661880	$0.25 each

	3/8-in x 1-1/2-in			
Washer	Fender Washer Zinc 3/8 x 1-1/2	68884	590720	$0.26 each
Lock washer	3/8-in Standard Split Lock Washer	63410	517402	$0.22 each
Nut	3/8-in Zinc-Plated Lock Nut	63405	154375	$0.19 each