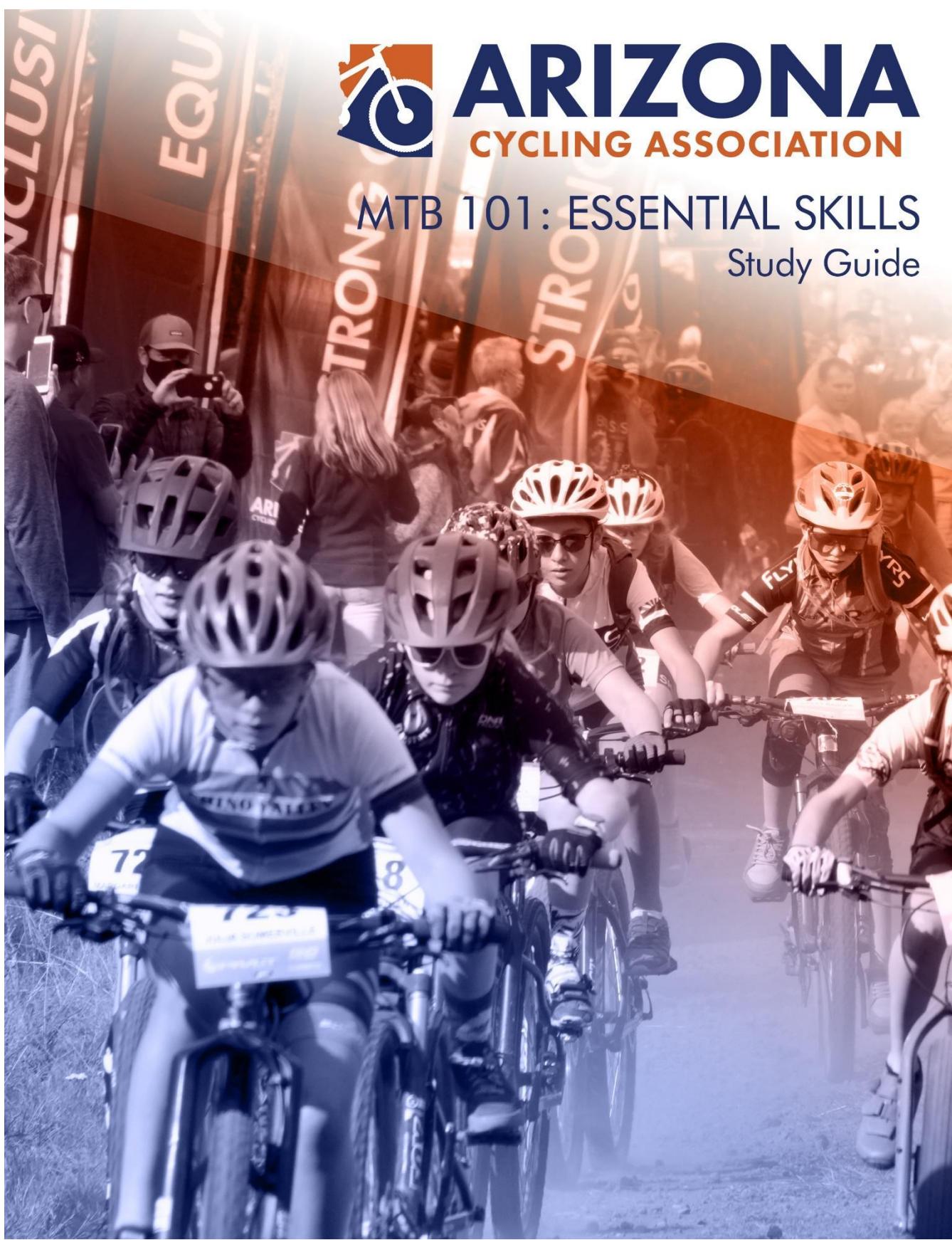




ARIZONA
CYCLING ASSOCIATION

MTB 101: ESSENTIAL SKILLS
Study Guide



Introduction

Welcome to youth mountain bike coaching. Although practices may begin and end at a recreation field with other sports, a mountain bike practice quickly evolves into something unique. We do not have a playing field or gymnasium. There are no boundary lines, fences, or bleachers. The equipment we use is far more expensive and complex. This study guide will better prepare you to coach our unique sport.

The beginning of practice may include a team gathering, stretching, and bodyweight exercises. Next, they may progress onto a grass field with skill development drills, short track efforts, and gameplay. Eventually, it will be time to form groups and ride on trails. This is where mountain bike coaching is unique from other youth sports.

Essential Skills Instructor

During rides with student-athletes, coaches have the unique opportunity to reinforce good riding habits and techniques. The Arizona Cycling Association offers three levels of skills instruction for coaches. At this first level, we hope to empower coaches to recognize opportunities for improvement during rides and provide the appropriate language and instruction to share with student-athletes.

The skill description, teaching points, and photos below will introduce you to the common language and terminology used to instruct team members. As you progress as a coach, additional training opportunities exist to prepare you to teach progressive skills sessions with other coaches.

Although there may be numerous ways to describe or teach a skill, coaches are encouraged to adhere to the language below. Uniform and consistent terminology make it easier for coaches to work together and coordinate their lessons. Students will also benefit from clear and consistent messaging as they learn.



Essential Skills

3 Common Elements

The following items are common to all skills and should be done at all times.

- Head up. Eyes scanning ahead.**

In order to execute maneuvers or skills, a rider must first scan the trail and take in all available information. This allows them to quickly develop a plan and be prepared to execute that plan with success. "See, Plan, Do!"

Additionally, the bike follows the eyes. Scan the trail ahead and recognize obstacles. Focus instead on the path to success, and the bike will follow.

- At least one finger on each brake lever.**

Riders should always have at least their index finger on each brake lever. This will allow them to use the brakes without unnecessary delay.

This may be modified for riders with smaller hands or those using bikes with lesser brake systems. Bikes with rim brakes, for instance, may require three fingers to bring the bike to a stop. As this may create an unsafe situation, instruct riders with smaller hands or lesser brakes to keep their speed under control, begin braking sooner, and leave extra distance behind other riders.

- Level Pedals when not pedaling.**

Riders should ride with level pedals or one foot in front of the other. This will keep the pedals clear of obstacles on the trail and allow the rider to maintain balance more easily.



Neutral Position

A standing position used when pedaling is not required on easy terrain or between challenges.

- **Tall and Relaxed**
- **Slight bend in elbows and knees**
- **Heavy feet, light hands**



Ready Position

A standing position used as a setup and follow through on challenging or technical terrain.

- **Deep bend in elbows and knees**
- **Elbows out for stability**
- **Heavy feet, light hands**



Braking

Used to control speed or come to a stop without skidding.

- **Ready Position**
- **Apply both brakes evenly**
- **Drop heel of the forward foot for bracing**



Forward & Back - Bike/Body Separation

Used while climbing or descending hills, large objects, or undulations in the terrain.

- **Ready Position**
- **Forward – Bend elbows and move shoulders and hips forward**
- **Back – Extend arms and move shoulders and hips back**



Side to Side - Bike/Body Separation

Used while riding narrow paths, cornering, avoiding hitting handlebars, and while sprinting.

- **Ready Position**
- **Wide knees**
- **Lean bike to side while hinging at elbows**



Intro to Cornering

Used to change direction while moving at moderate to high speed.

- **Low Ready Position**
- **Look where you want to go**
- **Lean bike in direction of turn**



Tight Turns

Used to turn sharply at relatively low speed.

- **Look through the turn**
- **Steer with handlebars**
- **Shoulders match handlebars**



Shifting

Used to maintain a comfortable pedaling cadence or pedaling speed.

- **Surge – Pedal forward forcefully**
- **Soft pedal and shift gears**
- **Resume pedaling normally after the shift is complete**



Seated Climbing

Used while climbing a gradual or long hill.

- **Shift to the appropriate gear**
- **Move shoulders towards handlebars**
- **Hips forward on the saddle as terrain steepens**



Standing Climbing

Used for excessively steep climbs or to accelerate while climbing.

- **Standing on pedals**
- **Forceful pedal strokes**
- **Pull with hands to rock bike side to side**



Crouched Climbing

Used while climbing challenging or technical terrain for short periods of time.

- **Low Ready Position**
- **Move hips forward**
- **Hover over seat**



Climbing Dismount

Used when unable to continue forward while climbing.

- **Look where you want to put your foot down**
- **Lock brakes**
- **Lean bike towards the landing area**
- **Land with the foot, stepping forward**



Climbing Restart

Used to start on a climb after stopping.

- **Lock brakes**
- **Foot in the power position**
- **Stand on the pedal and release brakes**



Descending Dismount

Used to stop safely while descending.

- **Look where you want to put your foot down**
- **Lock brakes**
- **Lean bike towards the landing area**
- **Land with the foot, stepping back**



Descending Restart

Used to start on a descent after stopping.

- **Lock brakes**
- **Foot in the power position**
- **Stand on the pedal and release brakes**



Appendix A – Risk Management Concerns

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

Braking

Failure to effectively control speed or stop in a balanced position often leads to difficulty with other skills or problems on the trail. A rider is balanced when they can come to a complete stop without the need to immediately put a foot down. Have riders practice that exaggeration of Braking.

A skidding tire is a tire that is out of control. Promote braking without skidding. Here are a few common reasons we see skidding occur:

- Not pulling the brakes gradually or evenly.
- May not be using enough front brake.
- May be riding without fingers on the brake levers which is causing the rider to brake late.
- May be riding too close to the rider in front of them.
- May not be looking up far enough down the trail.

Forward & Back Bike/Body Separation

Consider your progressions for Forward & Back Bike/Body Separation carefully. When teaching, start with riders practicing in the standard runway of cones to promote and expand their range of motion on flat ground. Progress to a safe hillside or use practice ramps before heading to the trail. Ensure that student-athletes understand that getting back, sometimes with hips behind their saddle, is required for safe descending.

Intro to Cornering

When setting up a slalom course for cornering, consider the space between cones (begin with six (6) paces). Too close and riders will be forced to steer around them, too far apart and riders may increase speed because it is too easy. Also, consider the surface you are practicing on. Look for opportunities on grass before using pavement or loose dirt/gravel.

Climbing and Descending Dismounts

These skills are in the MTB 101 because there is a high frequency of incidents related to student-athletes not being able to stop safely on a climb or descent. Be sure to practice varying grades. Additionally, traverse across slopes in each direction and have riders practice putting each foot down. Riders tend to develop a bad habit of always putting the same foot down. We want to ensure that they can step off the bike on the uphill side using either foot.

Appendix B – Standard Cone Layout

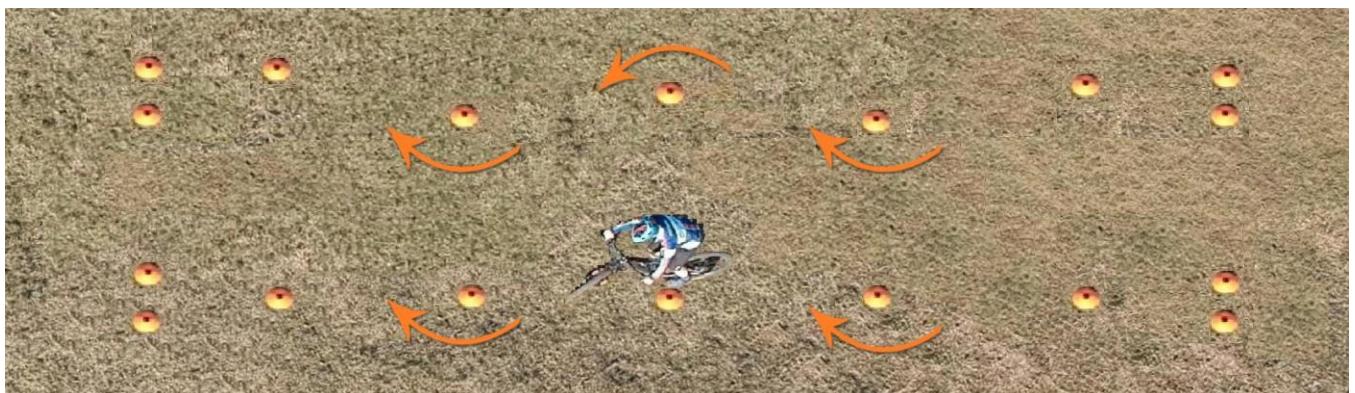
Neutral Position, Ready Position, Braking, Forward & Back, Side to Side



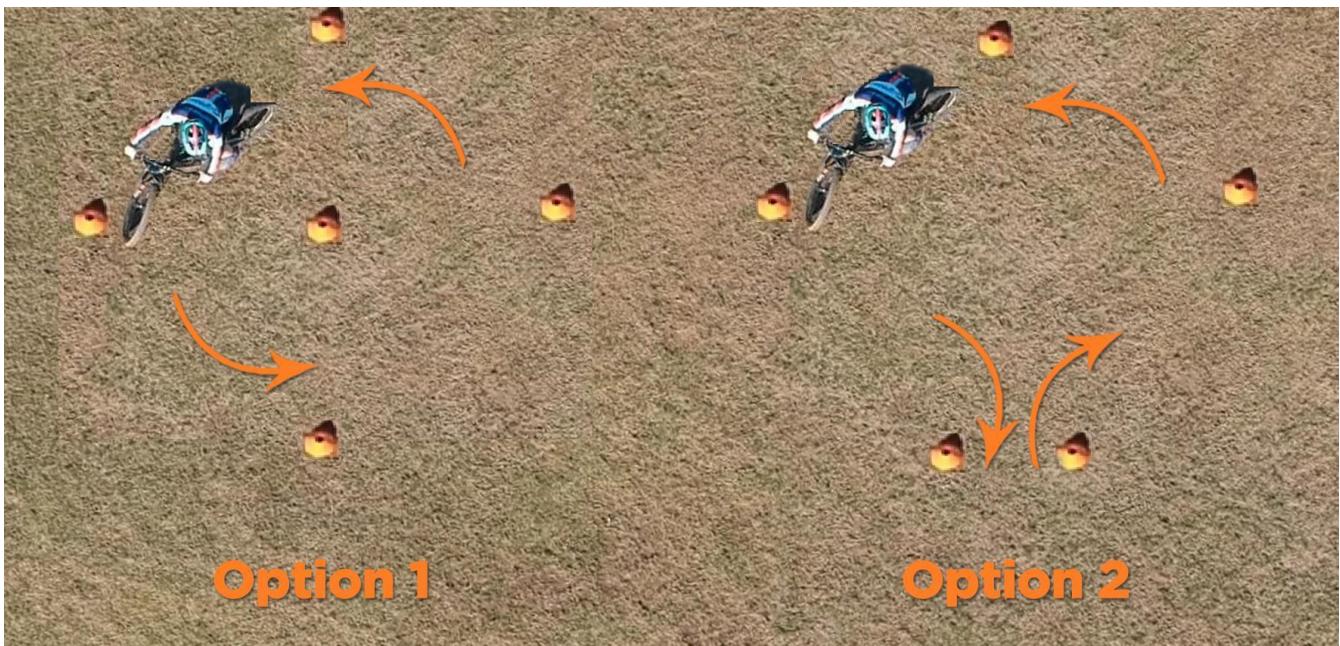
Forward & Back Bike/Body Separation



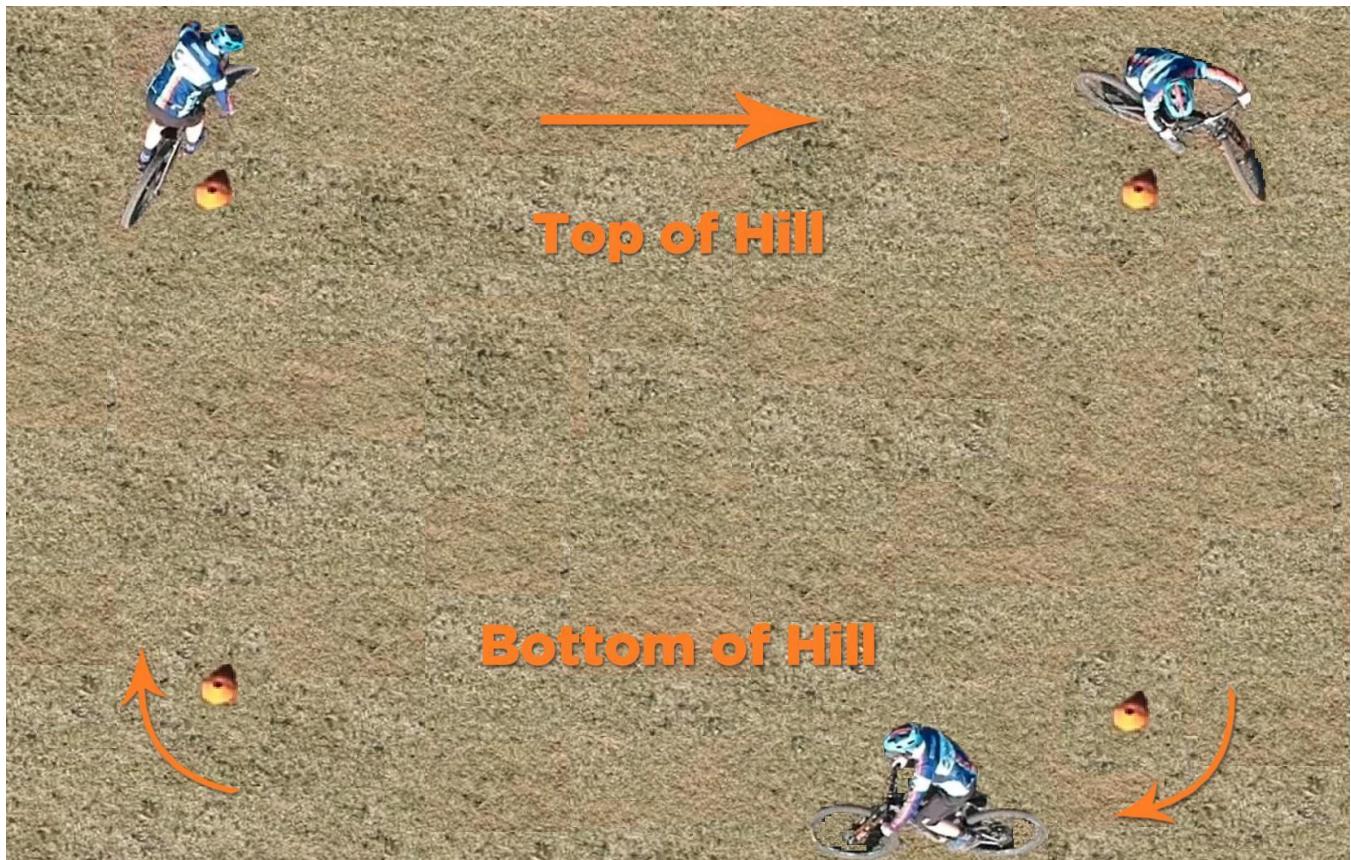
Intro to Cornering



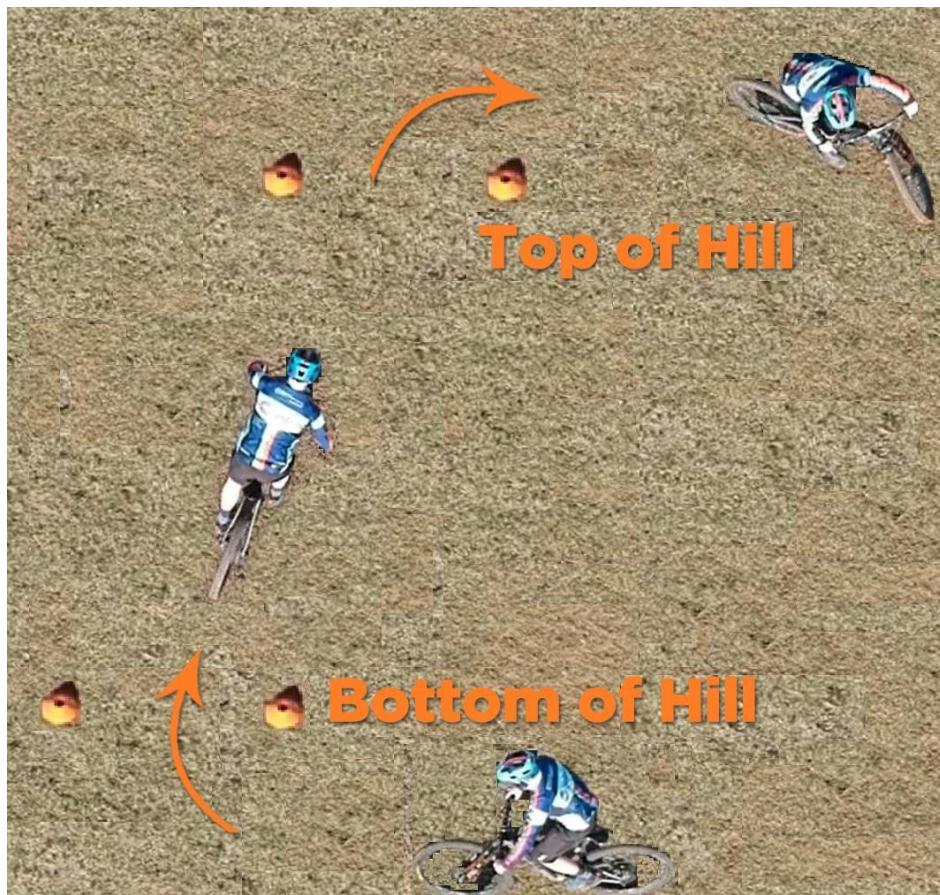
Tight Turns



Shifting



Three Methods of Climbing, Dismounts & Restarts



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 12" high)	194254	378739	\$23.98 each
Ramp/Platform	Plywood 23/32-in x 4-ft x 8-ft (cut into quarters, so each board is 2'x4')	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 3/8-in x 1-1/2-in	63324	661880	\$0.25 each
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

