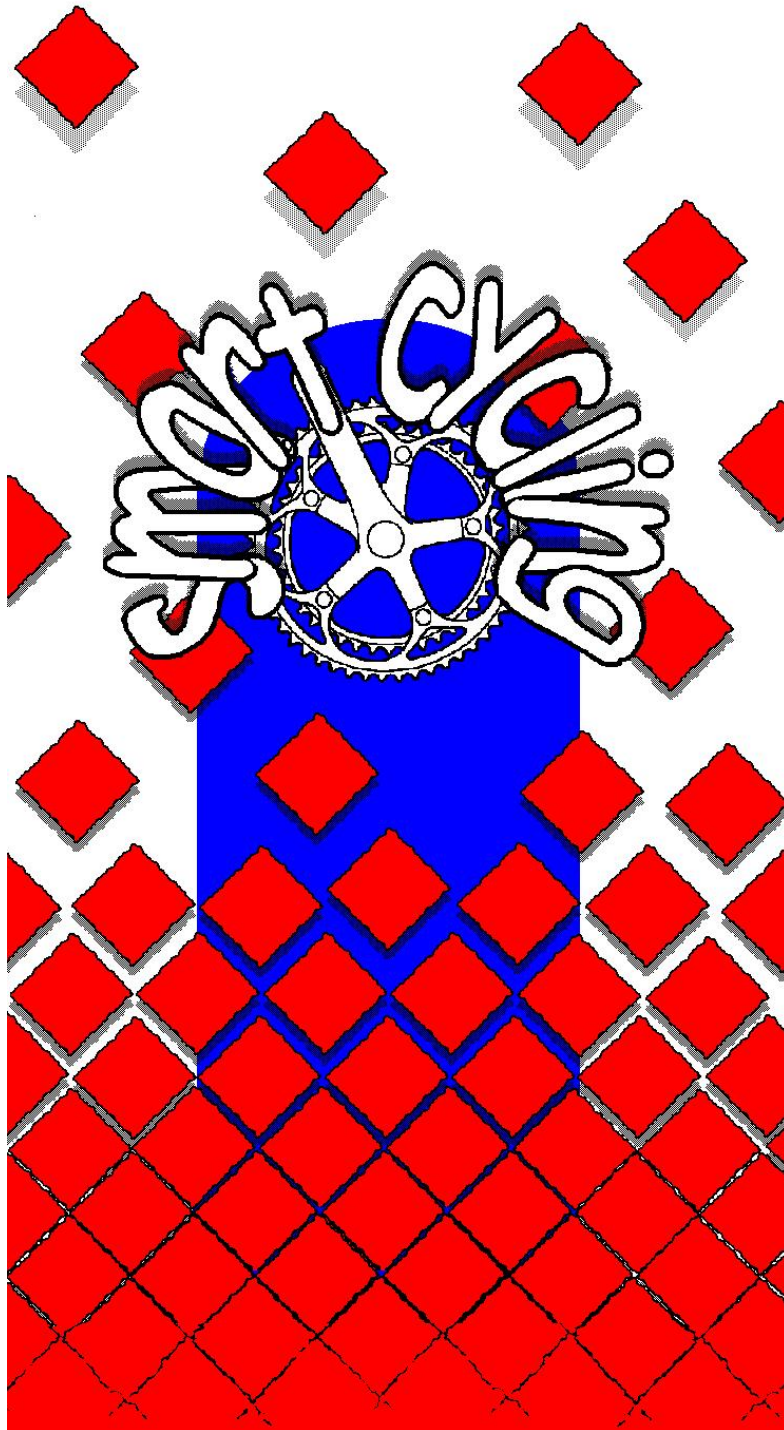


Bike Racing Skills Class



by
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Published by

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Smart Cycling Coaching, Inc.

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Acknowledgments

I want to thank all the athletes who given me so many great ideas over the years. Without their input, I never would have thought of half the things I have done or written down.

This book and all the work that went into it is dedicated to:

My Wife Peggy.

My children Julie, Erik, Tim, Mary Kate, Meghan, Melissa and Mikayla.

Craig Griffin, who let me become part of a great experience; US Paralympics

Allison, Greta, Anthony, Kim, Steve, Kevin, Babbs, Aaron and Sam for the inspiration.

Most of all, the many Juniors I have coached who learned these games and helped make them better.

Beginning games

How to fall over

Bumping wheels in the grass
Bumping wheels on a parking lot
Bumping wheels in the grass in a pack
Bumping shoulders in the grass
Bumping shoulders on a parking lot
Bumping shoulders in the grass in a pack
Bicycle obstacle course
Wheel pit relay
Push the rider out of the square
Looking ahead
Looking behind
Looking behind in a pack
Riding in a paceline
Riding in an echelon
Ride down the crooked straight line
Ride inside the shrinking circle
Riding down a plank
Riding down a curb
Riding on a seesaw
Limbo under the rope
Riding with no hands
Stretching on the bike
Throwing your bike
Time trial start and turn around
Race start drill
Sprint lead out
Feed zone frenzy
Block out the competition drill
The last rider wins drill
Pushing a teammate from behind
Bicycle tag
Grab the dollar
Road race tag
Pony express
Pick up the waterbottle
Pick up the waterbottle relay
Intertwined paceline in a circle
Head on paceline in a circle
Front and rear wheelies
Bunny hopping
Hopping sideways
Hitting a waterbottle with the back wheel
Trench warfare

Beginning Games

The purpose behind the beginning games, is to teach new or less experienced riders how to control and use their bicycle in whatever way is needed for the situation they are in. No matter how fast a rider may be capable of going, if they cannot control the bicycle, they will not be able to reach their full potential. Younger riders should be encouraged to learn as much as possible about how to handle their bicycle. Adults must be taught how to operate a motor vehicle properly and safely. It should be the same way with young riders and bicycles. Teaching a young rider how to safely and properly operate a bicycle is important. Every year hundreds of children are injured or killed while riding a bicycle. In keeping with the idea of safety, any activities done on a bicycle should only take place when wearing a helmet.

Some children may decide to continue in cycling long after these games are practiced. When they get old enough to be involved in a serious training and racing program, they will already be experienced bike handlers. The beginning games are loosely arranged in order of complexity. The more difficult the skills required, the later in the book they are covered. While there is no rule about what order these games are taught, it is suggested they be taught in order. This avoids giving riders too difficult a challenge before they have learned the necessary skills. Even more experienced riders should begin with these first games, just to freshen up their skills. Because riders are always concerned about crashing, the very first game is how to fall down.

HOW TO FALL OVER

Minimum number of participants: 1

Materials needed: A flat grassy area such as a football or baseball field. Cushioning pads are optional.

Instructions: Put the student riders in a circle around the instructor. Have the instructor sitting on their bicycle with their feet attached to the pedals and someone holding them up. Begin this drill by showing the riders what happens to you when the bicycle is no longer moving forward. Have the person holding the instructor up let go and see what happens. Demonstrate how to use your hands, shoulders, hips and other body parts to help break the fall and thus reduce the chance of injury. Show the difference between staying with the bike and separating from the bike. Pads or cushions spread on the ground can be used to soften the impact.

When the actual drill begins have the riders separate enough to avoid hitting each other when they fall down. Try a variety of techniques that allow the riders to overcome their fear of falling.

When the riders feel confident falling down from a standstill, demonstrate how to fall down when moving slowly. Repeat your demonstration until each rider feels comfortable doing it themselves.

Object of this drill: To teach the riders to overcome their fear of crashing as well as teach them what to do if they do become involved in a crash.

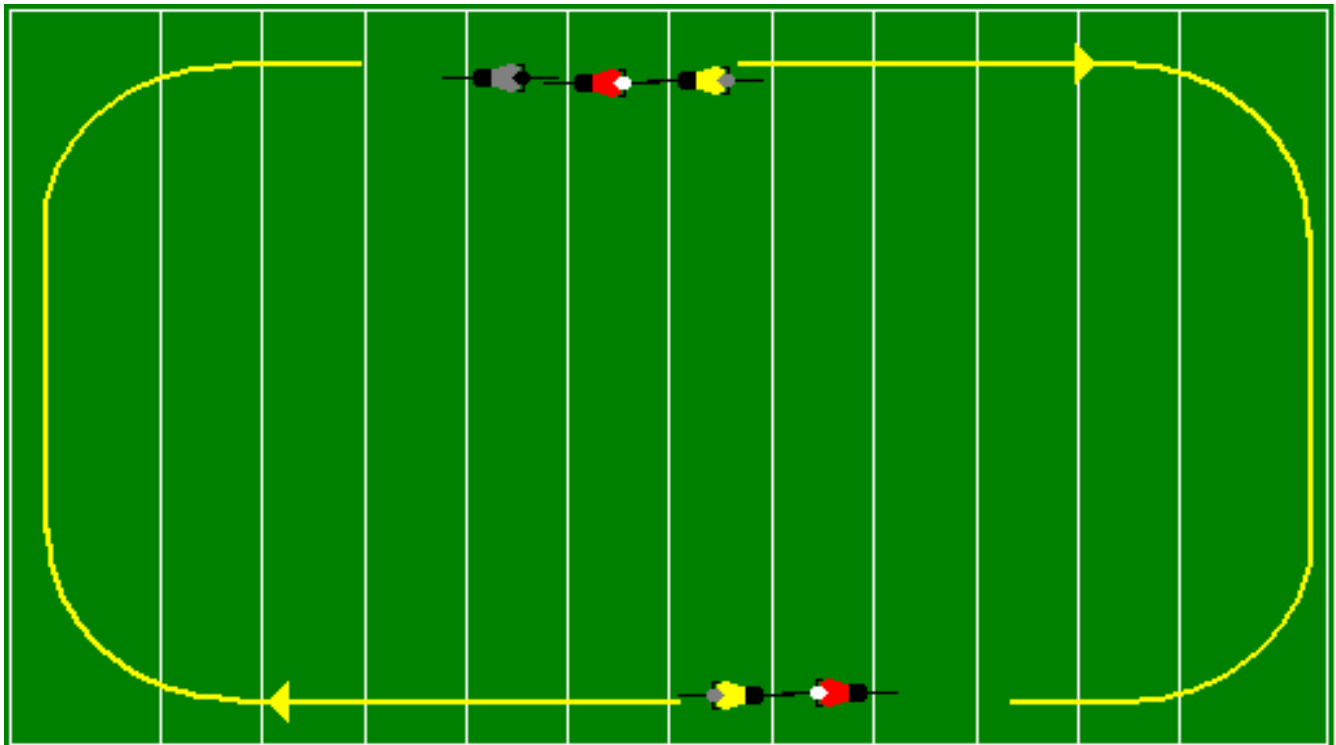
BUMPING WHEELS IN THE GRASS

Minimum number of participants: 3

Materials needed: A flat grassy area such as a football or baseball field where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: Begin this drill by having the riders walk through it holding their bikes. When the actual drill begins have the rider use the small chainring and a cog in the middle of the freewheel. No shifting allowed. Track bikes should be in a warm up gear. One rider takes the lead position and rides as straight as possible across the grass. The trailing rider follows behind and attempts to overlap their wheel with the lead position rider. The front wheel of the trailing position rider should not get as far as the rear hub of the lead rider. Once the wheels are overlapped the trailing rider attempts to make contact between the wheels by leaning toward the other rider's rear wheel. They then slow down while maintaining contact, until they are no longer touching the rear wheel. The object is to make contact without crashing or losing control. The first few attempts will probably result in the rider tipping over into the grass or at least having to stop momentarily. The drill is repeated until the trailing rider can make long term contact without tipping over or losing control. Then the riders exchange places and start over. When the pair are comfortable doing this drill, add another rider to form a trio. Have each rider change positions to get more experience.

Object of this drill: To teach the riders to overcome their fear of crashing into the rider ahead of them in a paceline or pack.



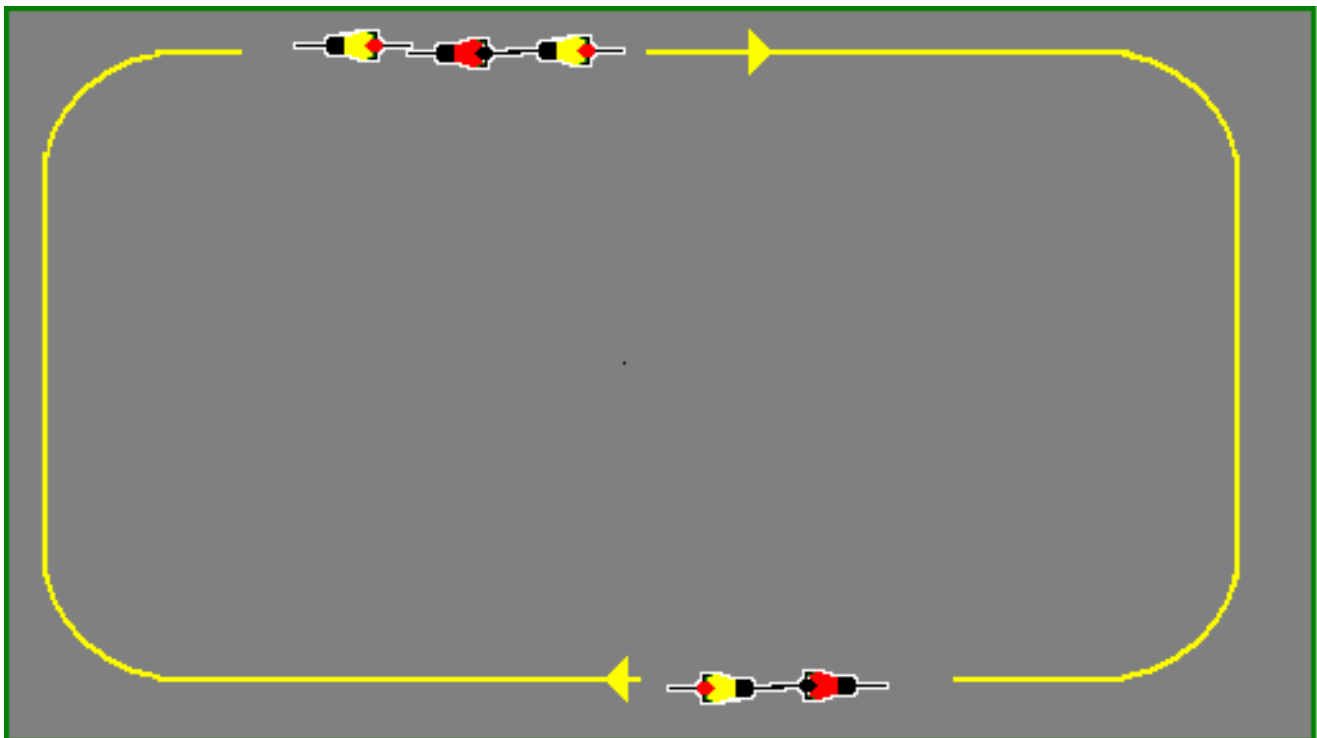
BUMPING WHEELS ON A PARKING LOT

Minimum number of participants: 3

Materials needed: A smooth, debris free parking lot where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. This is a follow up to Bumping Wheels In The Grass. Begin this drill by having the riders walk through it holding their bikes. When the actual drill begins have the rider use the small chainring and a cog in the middle of the freewheel. No shifting allowed. Track bikes should be in a warm up gear. One rider takes the lead position and rides as straight as possible across the pavement. The trailing rider follows behind and attempts to overlap their wheel with the lead position rider. The front wheel of the trailing position rider should not get as far as the rear hub of the lead rider. Once the wheels are overlapped the trailing rider attempts to make contact between the wheels. The object is to make contact without crashing or losing control. The first few attempts will probably result in the rider tipping over onto the pavement or at least having to stop momentarily. The drill is repeated until the trailing rider can make long term contact without tipping over or losing control. Then the riders exchange places and start over. When the pair are comfortable doing this drill, add another rider to form a trio. Have each rider change positions to get more experience.

Object of this drill: To teach the riders to overcome their fear of crashing into the rider ahead of them in a paceline or pack.



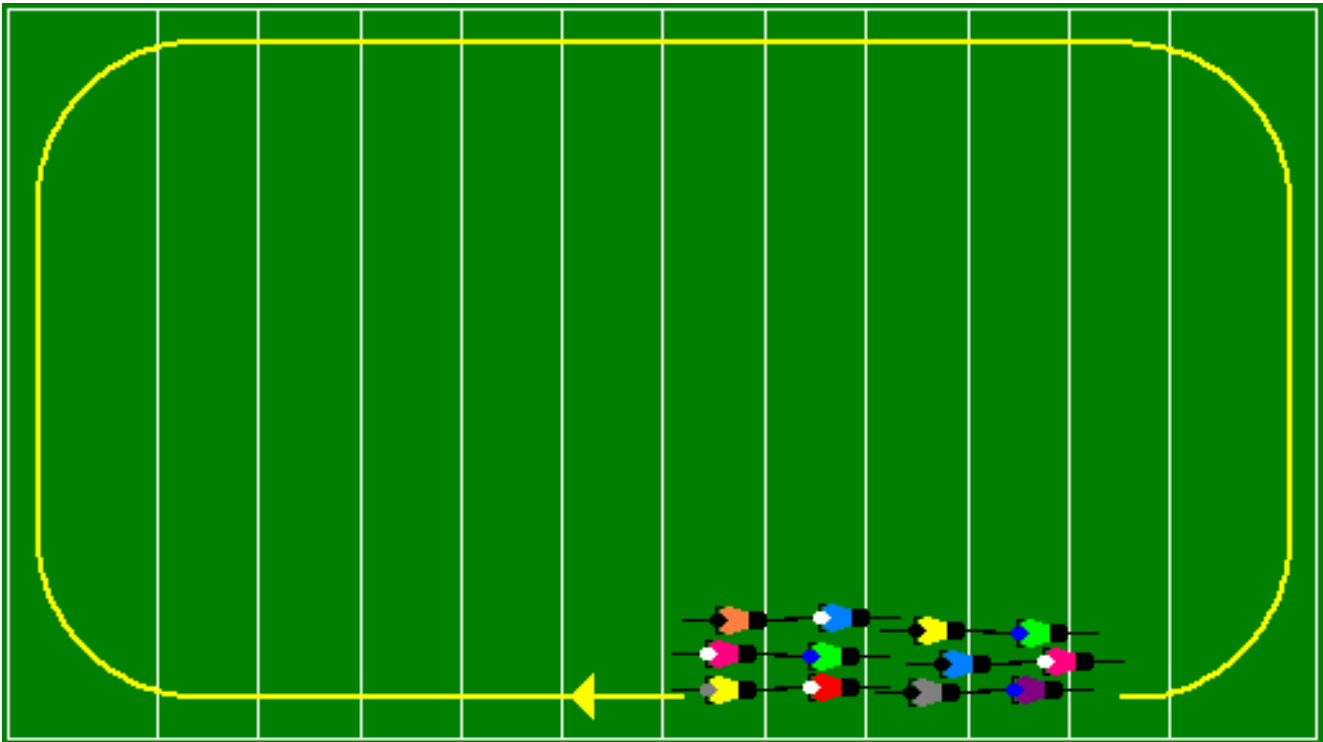
BUMPING WHEELS IN THE GRASS IN A PACK

Minimum number of participants: 9

Materials needed: A flat grassy area such as a football or baseball field where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: This is a follow up to Bumping Wheels in the Grass. Begin this drill by having the riders walk through it holding their bikes. When the actual drill begins have the rider use the small chainring and a cog in the middle of the freewheel. No shifting allowed. Track bikes should be in a warm up gear. Three riders take the lead position and ride as straight as possible across the grass. The trailing riders follow behind and attempt to overlap their wheels with the lead position riders. The front wheels of the trailing position riders should not get as far as the rear hub of the lead riders. Once the wheels are overlapped the trailing riders attempt to make contact between the wheels. The object is to make contact without crashing or losing control. The first few attempts will probably result in most of the riders tipping over into the grass or at least having to stop momentarily. The drill is repeated until all the riders can make long term contact without tipping over or losing control. Then all the riders exchange places and start over.

Object of this drill: To teach the riders to overcome their fear of crashing into the rider ahead of them in a paceline or pack.



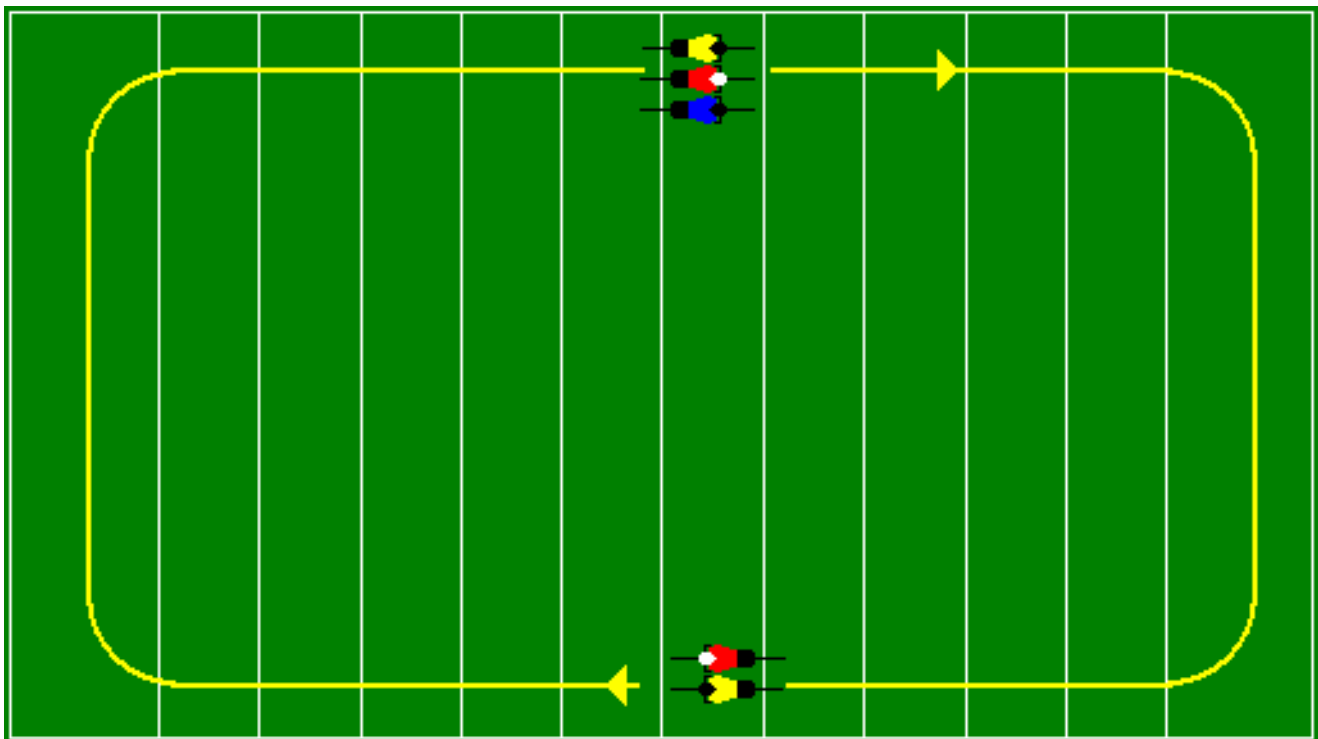
BUMPING SHOULDERS IN THE GRASS

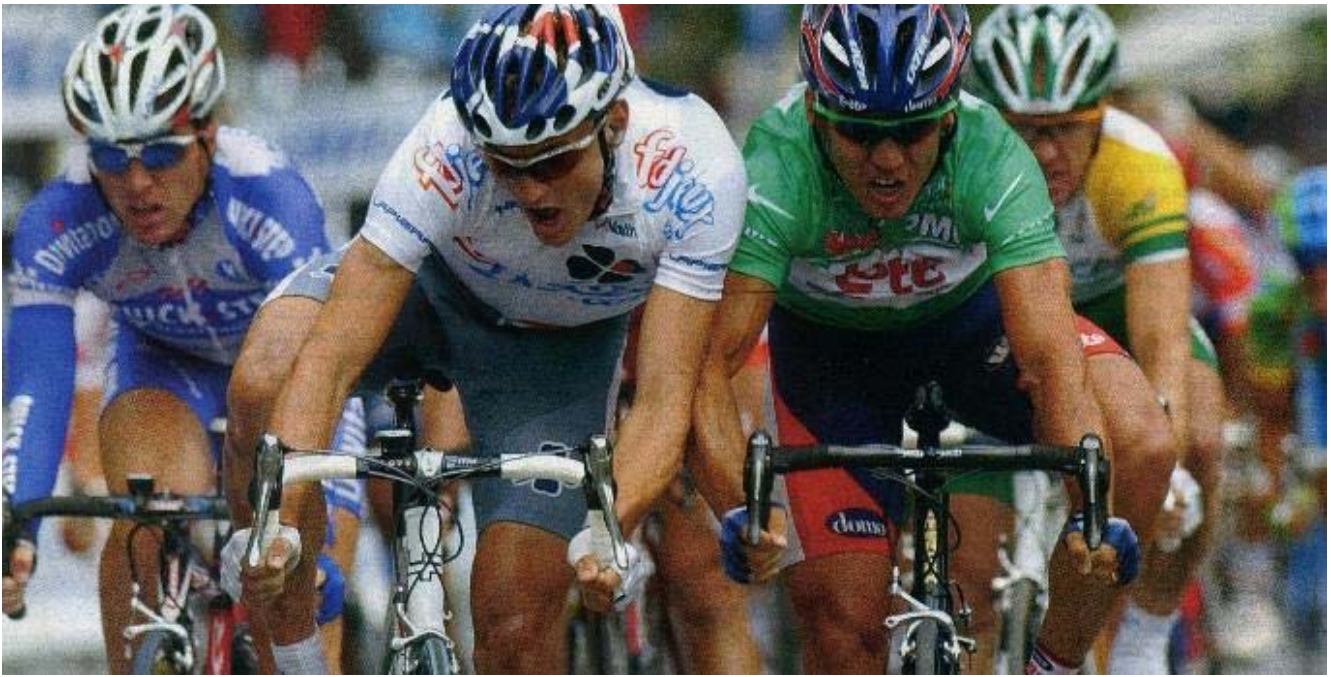
Minimum number of participants: 3

Materials needed: A flat grassy area such as a football or baseball field where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with two riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting is allowed. Track bikes should be in a warm up gear. The riders begin right next to each other. A third rider watches how it is done. With their hands in the drops, the two riders move closer together until their shoulders are touching. They then lean against each other without move their bikes apart. Using their elbows and shoulders as contact points, the riders pedal along side each other and gradually allow their bikes to drift apart slightly. The idea is to use the other rider to hold themselves up. The riders switch sides and repeat the drill until they feel comfortable doing it. The third rider then takes the place of one rider and the drill is repeated completely. When all three riders are comfortable doing this drill, they ride three abreast and repeat the leaning process. The rider in the middle keeps the other riders up.

Object of this drill: During a fast paced, large pack race like a criterium championship or track points race, the riders become squeezed together. In order to maintain a strategic position in such a field, a rider must be able to ride in contact with other riders and their bikes. The use of the shoulders and hips keep the other riders away. The use of the hands and elbows keep the handlebars apart.





Just in case you don't think these drills have any real world applications, these are professionals during the Tour de France.



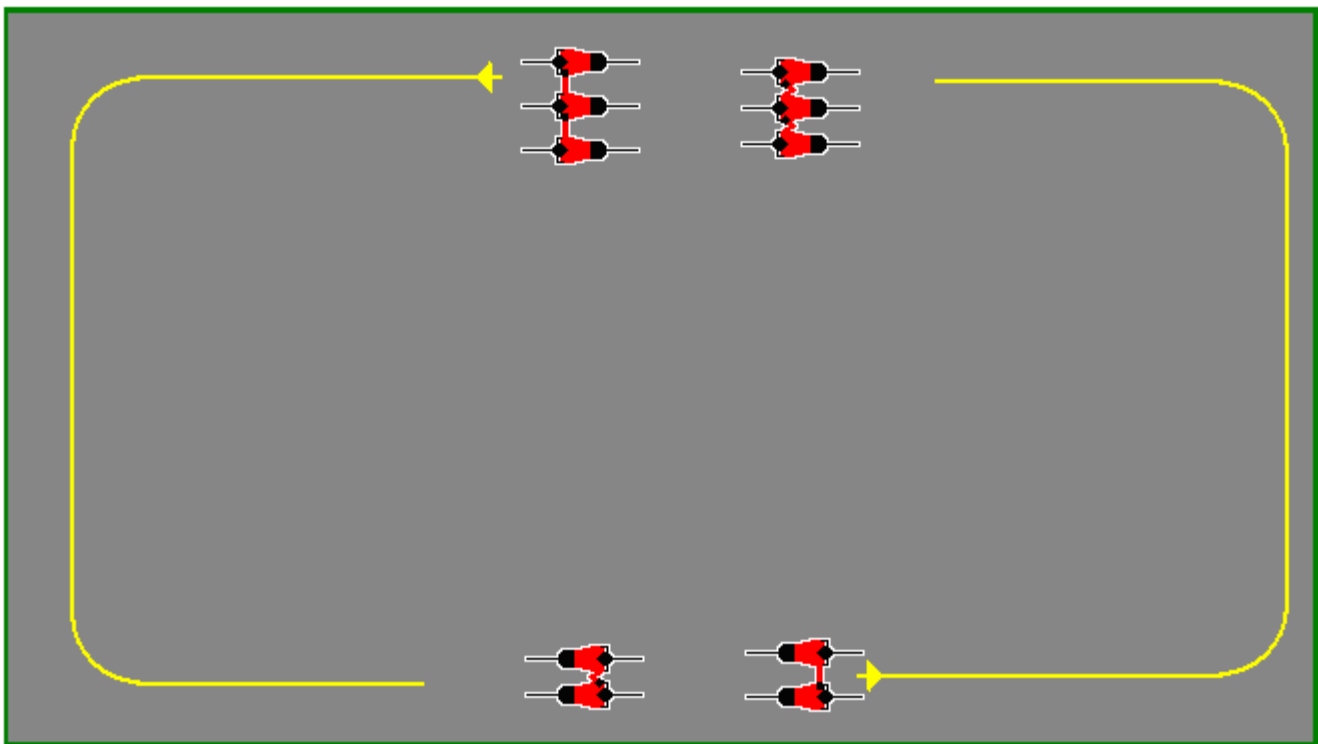
BUMPING SHOULDERS ON A PARKING LOT

Minimum number of participants: 3

Materials needed: A smooth, debris free parking lot where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. This is a follow up to Bumping Shoulders In The Grass. Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with two riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting is allowed. Track bikes should be in a warm up gear. The riders begin right next to each other. The third rider watches how it is done. With their hands in the drops, the two riders move closer together and the rider on the left places their right hand on the other rider's left shoulder. They rider around in a large oval path. The rider on the right steers their course and the rider on the left maintains contact with the shoulder. Once the riders get comfortable with maintaining contact, the rider on the left bends their elbow until they are up against the rider on the right. Then they gently push against the shoulder until their arm is fully extended. The drill is repeated until they feel comfortable making and breaking contact with the shoulders and elbows. A Third rider is added and again the outside rider does the steering for the trio. The riders switch sides and repeat the drill until they feel comfortable doing it.

Object of this drill: During a fast paced, large pack race like a criterium championship or track points race, the riders become squeezed together. In order to maintain a strategic position in such a field, a rider must be able to ride in contact with other riders and their bikes. The use of the shoulders and hips keep the other riders away. The use of the hands and elbows keep the handlebars apart.



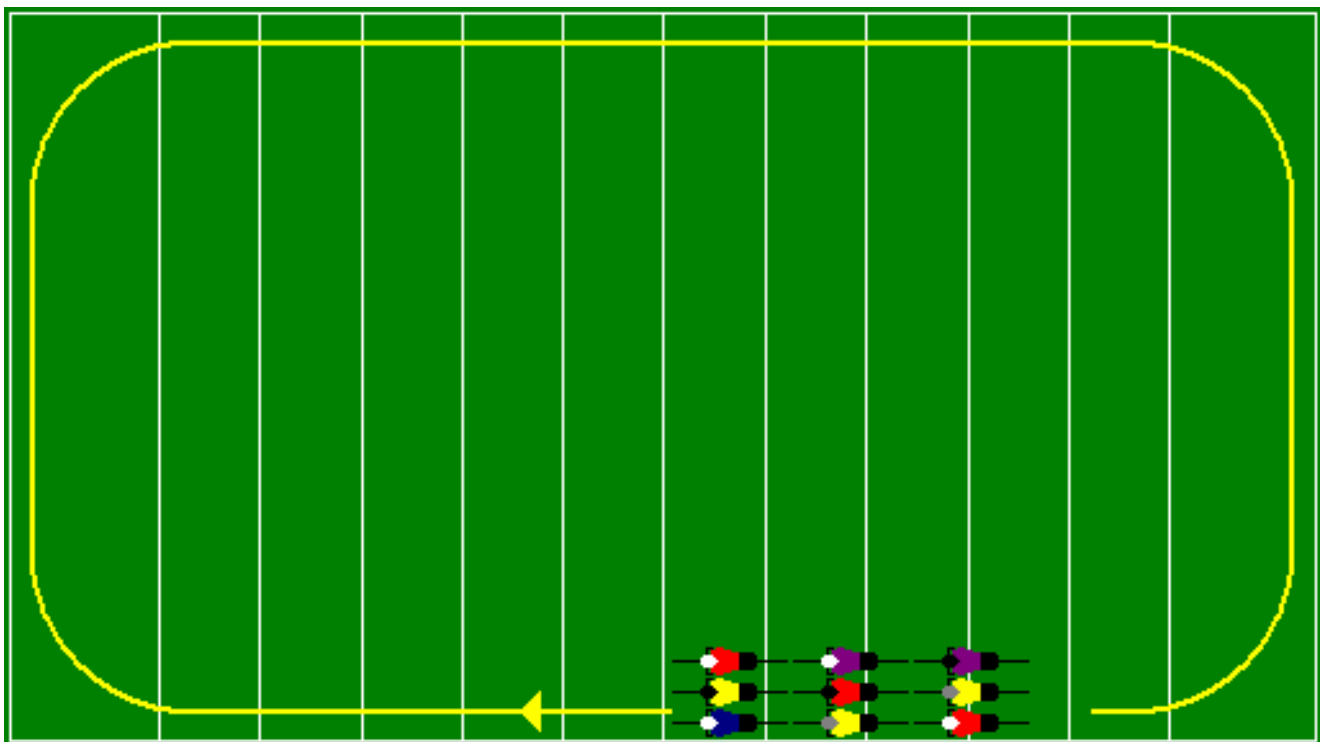
BUMPING SHOULDERS IN THE GRASS IN A PACK

Minimum number of participants: 6

Materials needed: A flat grassy area such as a football or baseball field where the riders can practice for at least 50 yards at a time. Riding in either a long oval or very large circle works best.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with three riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting is allowed. Track bikes should be in a warm up gear. The riders begin right next to each other. With their hands in the drops, the three riders move closer together until their shoulders are touching. They then lean against each other without move their bikes apart. The other riders fall in behind the leaders. Using their hands and shoulders as contact points, the riders pedal along side each other and gradually allow their bikes to drift apart slightly. The idea is to use the other rider to hold themselves up. The riders switch sides and rows then repeat the drill until they feel comfortable doing it in any position.

Object of this drill: During a fast paced, large pack race like a criterium championship or track points race, the riders become squeezed together. In order to maintain a strategic position in such a field, a rider must be able to ride in contact with other riders and their bikes. The use of the shoulders and hips keep the other riders away. The use of the hands and elbows keep the handlebars apart.



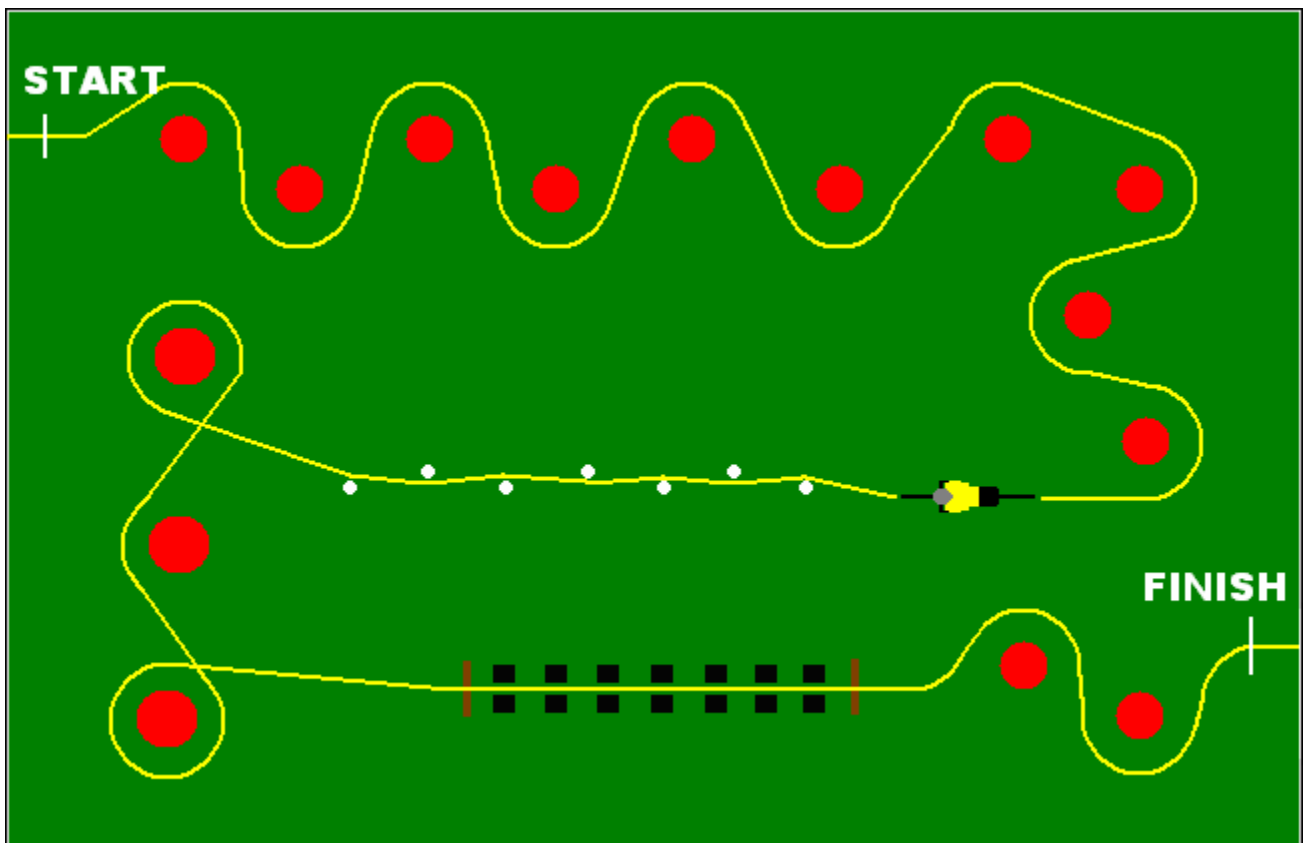
BICYCLE OBSTACLE COURSE

Minimum number of participants: 1

Materials needed: A flat open parking lot with no loose gravel or small stones, chalk, a supply of water bottles, a whistle and a stopwatch or timer.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with two riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting is allowed. Layout an obstacle course that requires the riders to turn back and forth between objects on the grass or pavement. Be sure the layout allows for the turning radius of the bicycles being ridden and the skills of the riders involved. Have the riders proceed through the course as many times as needed, in order to make them feel as comfortable with the course as possible. When all the riders have demonstrated competence with the obstacle course, have them run through it with a timer or stopwatch running. The rider with the best time and least mistakes is the winner.

Object of this drill: To teach riders how to deal with controlling their bicycles around objects they might encounter on the pavement, such as potholes, broken glass, debris or even fallen riders.



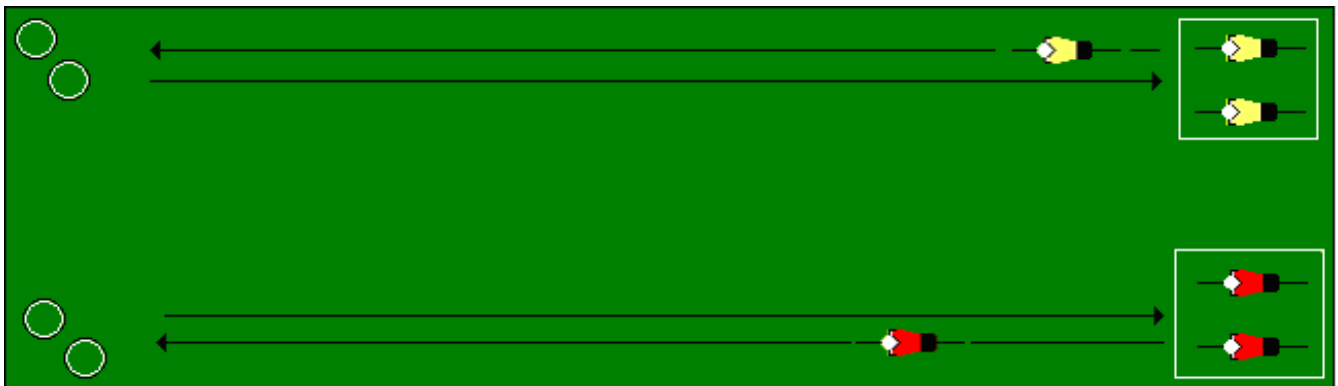
WHEEL PIT RELAY

Minimum number of participants: 6

Materials needed: A flat grassy field or a flat paved surface such as a parking lot, a chalk starting line and a pair of wheels for each team of riders.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riders will start from a spot on the grass or chalk line on the ground at one end of a parking lot. Suggested gearing is the small chainring and any cog. Riders are broken up into teams of three or more. Riders line up at one end of parking lot, with one pair of wheels for each team at the other end. Riders race to the other end of the lot and take off their wheels. They then put on the other pair of wheels and return to the starting line. The next rider is tagged and repeats the wheel changing operation.

Object of this drill: During a race, riders may be in a position where they need to change wheels, but are without a mechanic. It is important for all riders to know how to change wheels as quickly as possible. If they are in a position to have their wheels changed, but are not ready, they will slow down even the best mechanic.



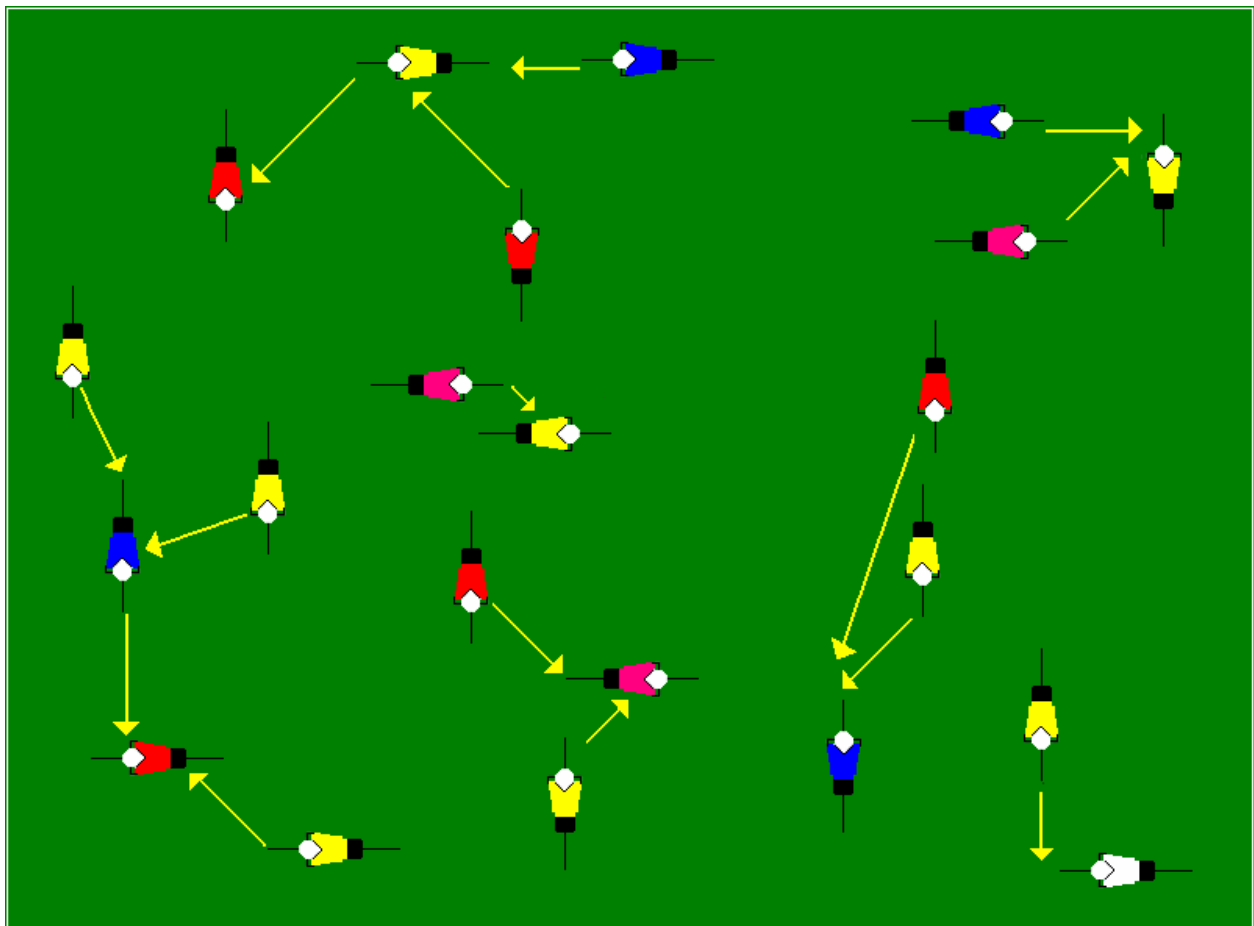
PUSH THE RIDER OUT OF THE SQUARE

Minimum number of participants: 6

Materials needed: A flat grassy area such as a football or baseball field with a square area 20' x 20' marked off on the ground.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. Track bikes should be in a warm up gear. The riders must keep their hands on the handlebars and their feet on the pedals. Using the skills learned in the previous drills, the riders must attempt to force the other riders out of the square. Riders are eliminated from the game when they either leave the square, their feet touch the ground or they take their hands off the handlebars. The last rider in the square wins. As a reversal strategy, have the athletes put the glasses in their jersey pockets with the earpiece hanging out. The object of the drill then becomes taking someone's glasses. If the athlete's glasses are taken, they are out.

Object of this drill: During a race with a large field, such as a points race on the track or a criterium, riders will have to deal with physical contact. Not knowing what to do can lead to a crash. The more competent a rider is on their bike, the safer they are.



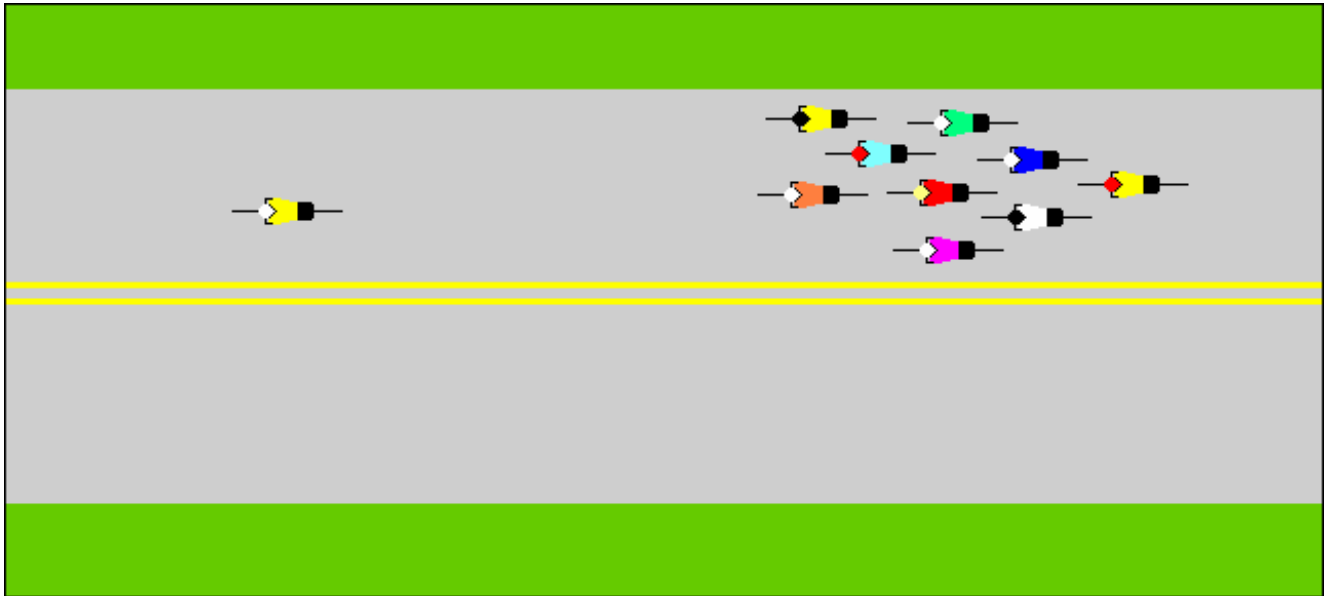
LOOKING AHEAD

Minimum number of participants: 3

Materials needed: Any empty stretch of road, parking lot, velodrome or bicycle path with little or no traffic.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Form the riders into a paceline riding as close as is comfortable. Have the rider in the lead position randomly lift their right or left hand. Get the riders to look over the shoulder of the rider directly in front of them and identify which hand is being raised. Have the riders rotate through the line as many times as necessary for them to become comfortable with looking ahead of them.

Object of this drill: Most new riders feel uncomfortable riding close to other riders. This is especially true when it comes to riding near the wheel directly in front of them. This makes it hard to control the bike when in a large group because they are not watching for pavement conditions ahead. This drill gets the rider feeling more confident with riding close to others even at speed. Eventually the rider will be able to judge their closeness to the people around them using their peripheral vision instead of staring at the wheel just ahead.





Real world application...how far away is the break from where you are?

LOOKING BEHIND

Minimum number of participants: 2

Materials needed: A straight road with little or no traffic or a long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riding in a straight line, away from the shoulder of the road or curb, have the rider practice holding the handlebars with the left hand and looking around to their right. The instructor holds up one hand and the rider must look behind long enough to determine which hand is up. The rider then returns to their normal position. If the rider is no longer on line, they should return to their original guideline. Use any straight line or mark on the ground for a guide. Next the rider holds the handlebars with the right hand and turns their head around to the left. The instructor holds up one hand and the rider must look behind long enough to determine which hand is up. The rider then returns to their normal position. If the rider is no longer on line, they should return to their original guideline. Repeat this portion of the drill until the rider is comfortable turning either direction and holding it for a few seconds. Have the rider dismount and bend over into an aerodynamic upper body position like a down hill skier. Holding their arms up in a position similar to where they would be on their handlebars, have them look under their right arm and to the rear. Hold up one hand and have the rider identify which hand is raised. Now have the rider mount their bike and perform the same thing while pedaling. Hold up one hand and have the rider look back under their right arm and identify which hand is up. Have the rider repeat the drill, but looking under their left arm. Continue until they feel comfortable doing this for several seconds at a time.

Object of this drill: During a race and especially during an attack, the rider will need to check for chasing riders and the length of the gap. Looking under the arm allows the rider to keep the pressure on while checking on the riders behind. Turning around and looking back would be used when riding at a more moderate pace.



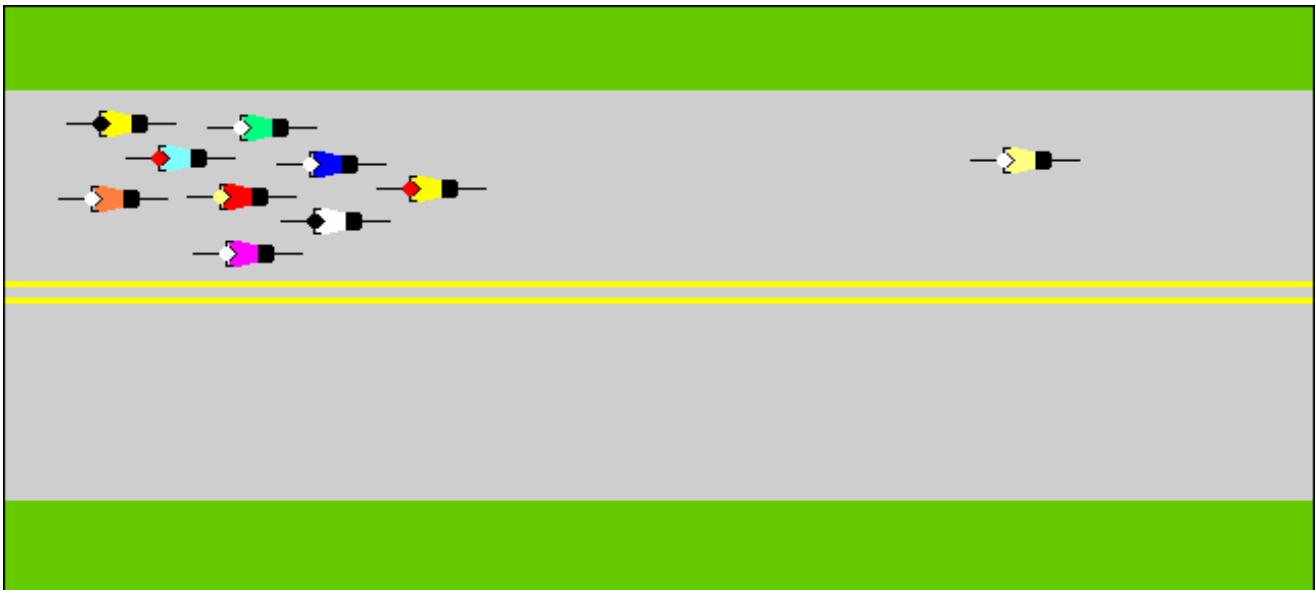
LOOKING BEHIND IN A PACK

Minimum number of participants: 6

Materials needed: A straight road with little or no traffic or a long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riding in a straight line, away from the shoulder of the road or curb, have the riders practice holding the handlebars with the one hand and look back to their right or left. The instructor, riding a few bike lengths behind the group, holds up one hand and the student rider must look behind through the group long enough to determine which hand is up. The rider then returns to their normal position. Repeat this portion of the drill until the rider is comfortable turning either direction and holding it for a few seconds. Repeat the entire sequence with each rider. Have the riders dismount and bend over into an aerodynamic upper body position like a down hill skier. Holding their arms up in a position similar to where they would be on their handlebars, have them look under their right and left arms and to the rear. Hold up one hand and have the rider identify which hand is raised. Now have the riders mount their bikes and perform the same thing while pedaling. Hold up one hand and have the rider look back under their right or left arm and identify which hand is up. Have the rider repeat the drill until they feel comfortable doing this for several seconds at a time.

Object of this drill: In a race, it may be necessary to look behind from within a group of riders, in order to find out what is going on. Teammates may be trying to bridge a gap. A dropped rider may be trying to return to the front. Perhaps the rider just wants to see if an attack has had the desired effect. However, it is undesirable to have to slow down in order to do this. This drill simulates pack riding conditions and forces the rider to look carefully at what is going on behind.



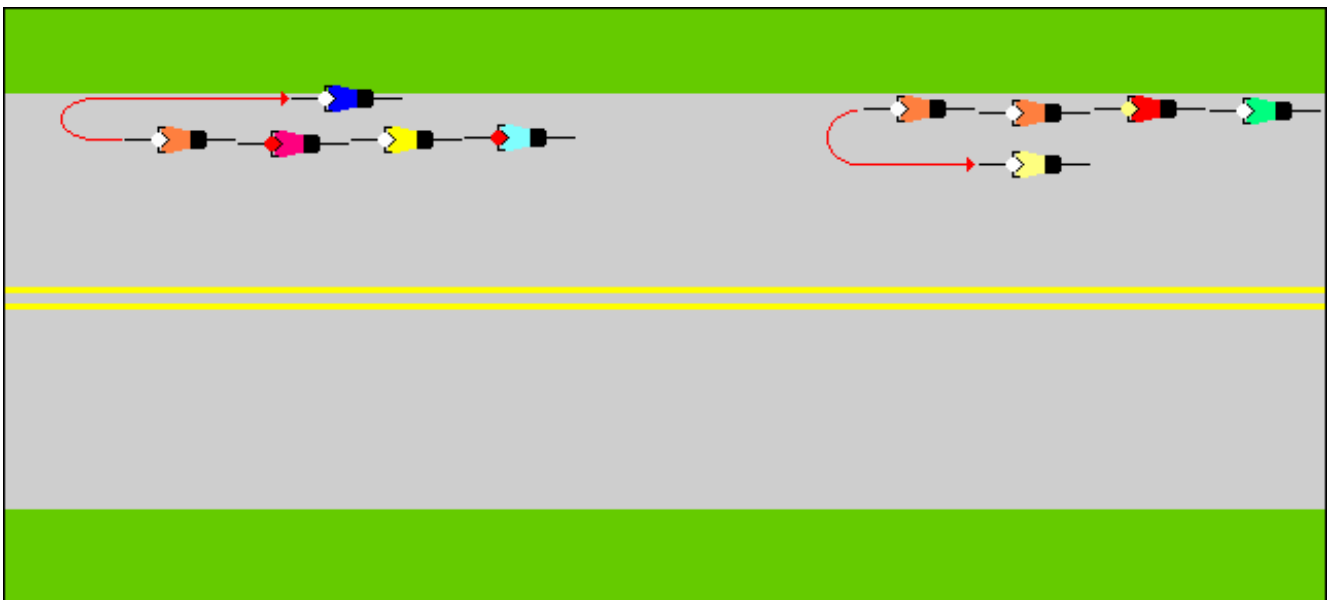
RIDING IN A PACELINE

Minimum number of participants: 4

Materials needed: A straight road with little or no traffic or a long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid the possibility of crashing. Have the riders walk through with their bikes to get a sense of the distance needed between bikes to get a good draft. Have the riders get into the proper paceline formation. The riders should be geared in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. Start by having them stay in the same order and work on the gap between the wheels. The riders should maintain this formation for a few minutes and then regroup in a different order. The idea is to get used to how all the riders move their bikes. Continue this portion of the drill until all the riders have been behind each other. Next have the riders regroup into a paceline and close the gap between the wheels. After riding for twenty turns of the pedals, the lead rider drifts to the left and begins to drop back behind the other riders. This rider should be at the back before the next rider drops back. This should be done before the lead rider has pedaled twenty strokes. Continue this drill until all the riders can maintain a tight paceline at higher speeds and in bigger gears. If there are enough riders available, the paceline drill can be expanded to work with more than one rider dropping back at a time and double pacelines. If this drill is done on a velodrome, the riders can also practice the standard formation for a team time trial or pursuit.

Object of this drill: New riders often make the mistake of not taking advantage of the aerodynamics of a paceline. A tight, well operated paceline will not only give the riders the ability to ride longer and faster, but get them used to trusting the other riders.





Real world application...amateurs and professionals working together, but waiting for their moment.



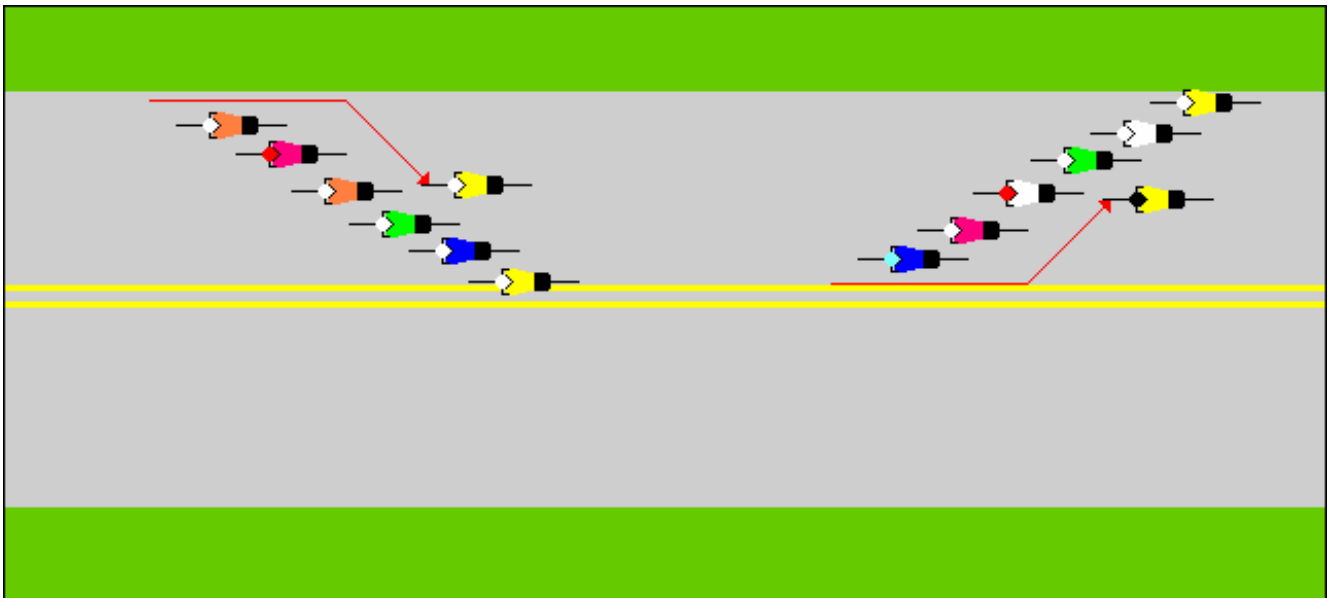
RIDING IN AN ECHELON

Minimum number of participants: 6

Materials needed: A straight road with little or no traffic or a long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing and to get a better understanding about wind direction. Get the riders into the basic formation in the grass. Determine the angle the echelon will take by checking the wind direction. If there is no noticeable wind, choose a direction and align the riders properly. Have them walk along and perform the rotation until all the riders have been in front. Emphasize the importance of maintaining the formation during all the position changes. Mounting their bikes, have the riders form into an echelon and ride the same pattern as when they walked. Gearing should be the small chainring and a cog in the middle of the freewheel. No shifting allowed. Rotate through all the riders until they can maintain the formation at speed.

Object of this drill: During bad weather, especially in the spring, riders cannot rely on a paceline formation to ride aerodynamically. New riders have a difficult time maintaining the formation and rotating properly. This drill works on a normal weak point.



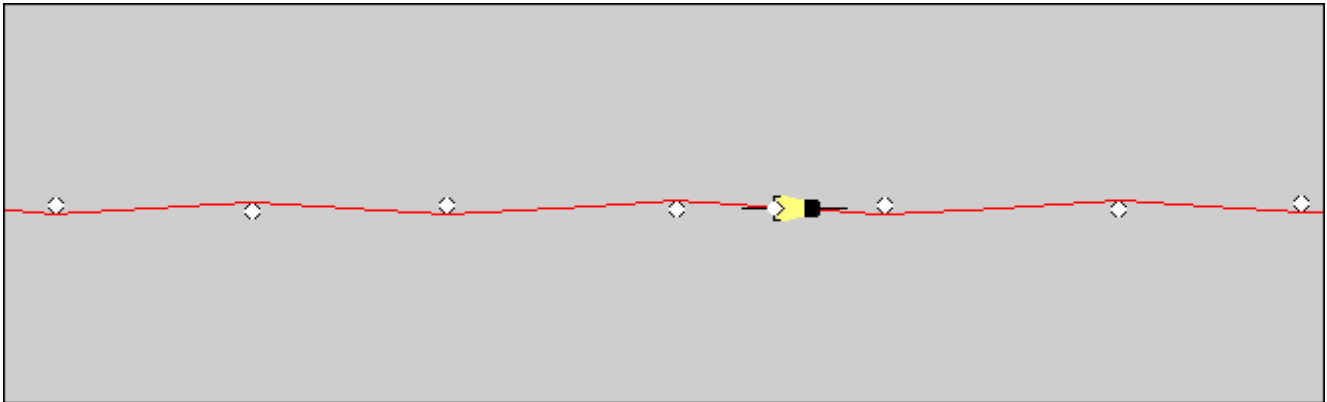
RIDE DOWN THE CROOKED STRAIGHT LINE

Minimum number of participants: 1

Materials needed: A flat paved surface such as a parking lot or long driveway, 12 tennis balls cut in half and a straight line 50 feet long.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. Place the half tennis balls 3 feet apart on top of the straight line. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. Riders approach the end of the line and attempt to ride down the line and avoid making contact with the tennis balls. Riders are not permitted to turn their handlebars in order to go around the half tennis balls. The riders will have to shift their bodies and bikes from side to side. The drill is repeated until all the riders can successfully perform it.

Object of this drill: As with the bunny hop drill, the riders must learn to get their bicycle around objects or pavement flaws that could cause a crash or flat tire.



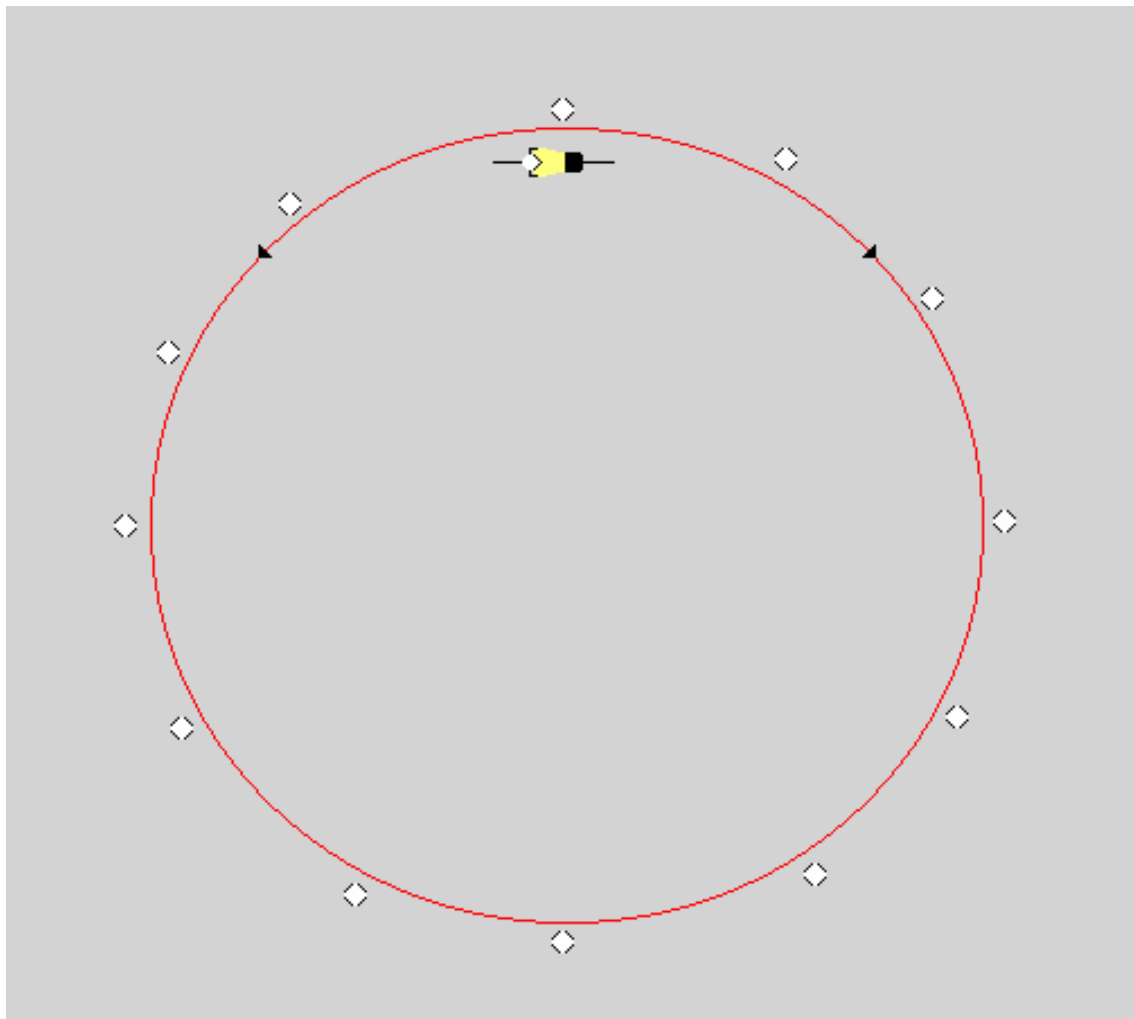
RIDE INSIDE THE SHRINKING CIRCLE

Minimum number of participants: 1

Materials needed: A flat paved surface like a parking lot or wide driveway, a piece of string or cord 20 feet long and a dozen tennis balls cut in half.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. Layout a circle of half tennis balls on the pavement twenty feet in diameter. Explain and demonstrate how to turn by pushing down on the outside end of the handlebar and pull up on the inside end. Show proper body alignment over the top tube. Remind the riders that they must keep pedaling during the entire circle. Have the riders enter the circle and pedal along the inside edge, in the small chainring and a cog in the middle of the freewheel. As they become used to the maneuver, have them increase their speed. When they have demonstrated competence in one direction, have them go in the opposite direction. When they can ride in either direction, reduce the diameter of the circle and repeat

Object of this drill: It is absolutely essential that the riders not only can turn and steer correctly, but that they have confidence in their ability. Their safety and the safety of others depends on their skills in this area.



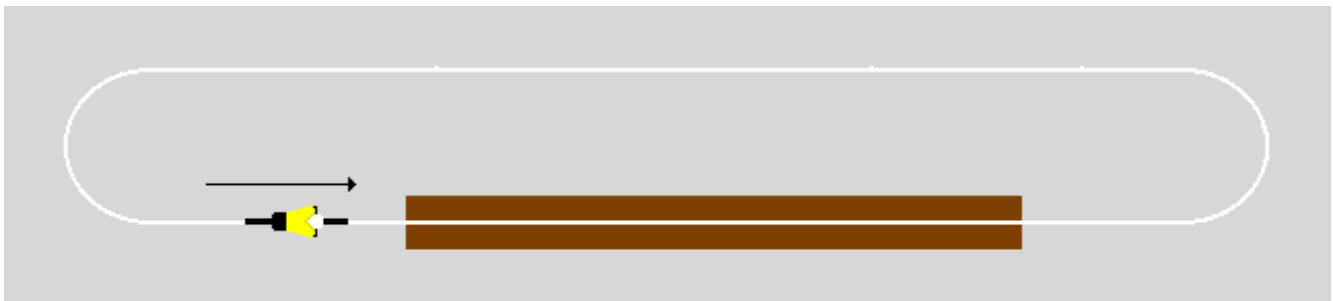
RIDING DOWN A PLANK

Minimum number of participants: 1

Materials needed: A flat surface such as a parking lot or long driveway and at least one plank 1" x 4" x 8' with the end beveled to allow a wheel to ride safely onto it.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. Starting with a practice on flat ground, the rider must stay in a straight line without looking on the ground directly in front of their bike. Once the rider is comfortable with riding straight without looking at the ground, have them try riding down the plank. This drill is difficult and should be practiced with patience. The rider should make it their goal to go a little further on each try, until they can ride the entire length of the plank without falling off. When they can ride the entire plank add another one to the end and continue the drill. Increase the level of difficulty by having the riders follow each other down the plank with their wheels within 12 inches of each other.

Object of this drill: Often the riders will be in a field of other riders and need to be watching the road ahead. They must be able to take their eyes off their immediate surroundings and not come in contact with the riders around them.



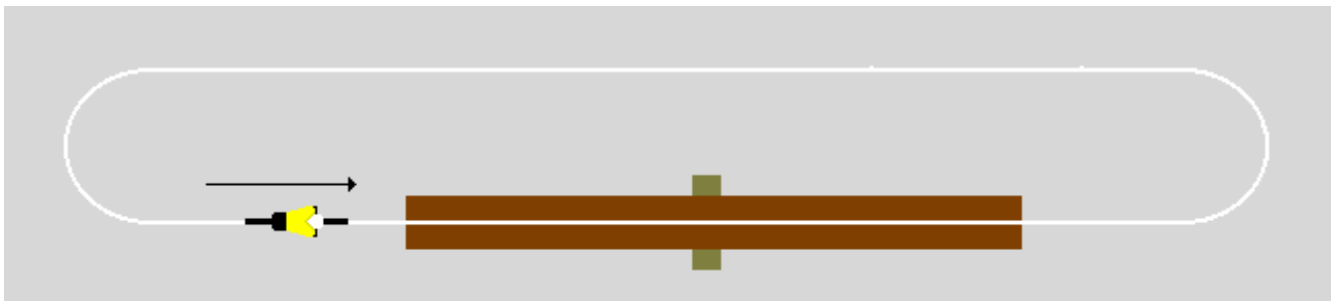
RIDING ON A SEESAW

Minimum number of participants: 1

Materials needed: A parking lot or driveway, a 6' or longer length of 2" x 6" board, with the ends cut at an angle to allow the riders wheel to go up onto the board easier and a small piece of 2" x 4" nailed across the bottom, about 8 inches from middle as point to tilt on. This will allow the front end of the plank to come back down to the ground after the rider is off it.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. Lay the plank on a driveway or parking lot and have the participants ride down the length of the plank without falling off. As the riders become more comfortable with the drill, have them do it one behind the other, with a gap of about 4 feet to allow the plank to drop back down.

Object of this drill: Is to improve the rider's confidence in their bike handling skills when having to traverse an object in the road.



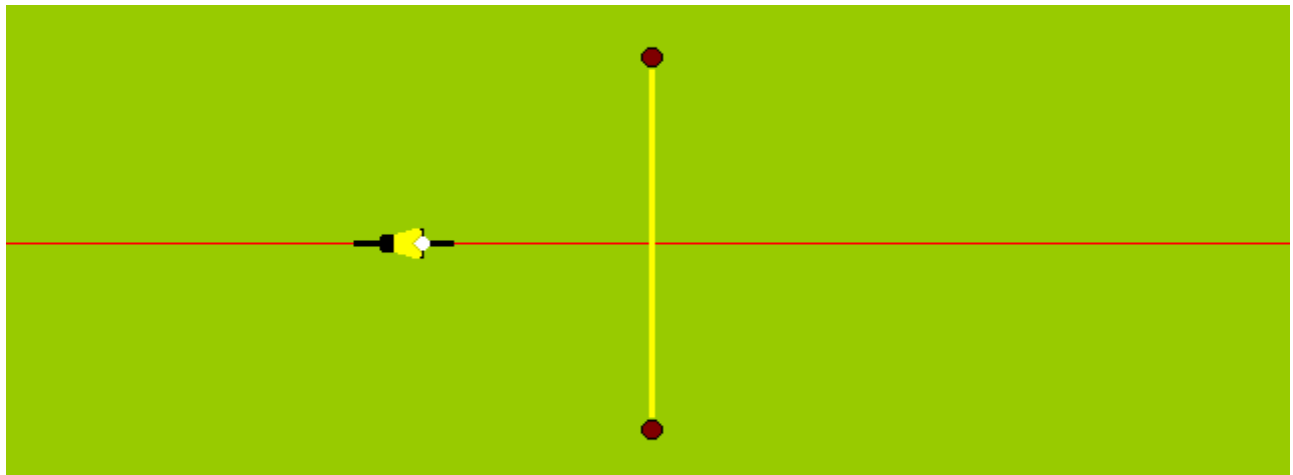
LIMBO UNDER THE ROPE

Minimum number of participants: 2

Materials needed: A tape measure, a piece of rope 20' long, two trees or poles to tie the ends to and a flat, grassy area to ride on, such as a playground, football field or backyard.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. The rope is tied between two trees, poles or between the uprights of a soccer net. The center of the rope is set at the top of the normal aerodynamic position of the tallest rider. Riders must ride their bike under the rope without touching the ground or tipping over. Any maneuver that will get the rider under the rope without tipping over is okay. After all the riders have successfully gone under the rope, the center of the rope is lowered four inches and the drill repeated. This process continues until all the riders are eliminated but one.

Object of this drill: This type of riding is designed to make the rider more confident and adept on their bike. If they can manage to ride under the rope without crashing, they will be able to remain upright on the bike during hazardous conditions.



RIDING WITH NO HANDS

Minimum number of participants: 1

Materials needed: A smooth parking lot or unused road.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. This drill cannot be practiced first in the grass, so make sure the rider is wearing gloves, in the event of a fall. It may be necessary to have the rider begin by taking one hand off the handle bars while holding on with the other and then switching the procedure to the other hand. In order to keep the bicycle upright, the rider will probably need to keep pedaling in order to maintain speed. Once the rider becomes comfortable taking one and then both hands off the handle bars, they need to practice sitting upright. After the rider becomes comfortable with sitting up and pedaling, have them practice stretching and taking hand ups from another rider or a person standing on the side of the road.

Object of this drill: Riders need to be able to stretch, grab food, help other riders and use their hands and arms independent of the handle bars. The more comfortable the rider is on the bike and the more skillful they are in riding, the more confident they will be when racing.



STRETCHING ON THE BIKE

Minimum number of participants: 1

Materials needed: A smooth parking lot or unused road.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. This drill cannot be practiced first in the grass, so make sure the rider is wearing gloves, in the event of a fall. This drill is directly tied to the Riding With No Hands drill. One of the benefits of being able to ride without holding the handle bars, is being able to stretch and loosen up while pedaling. Once the rider has shown the ability to take their hands off the handlebars, have them practice sitting up straight while continuing to pedal. The riders will find that a lot of the control of direction depends on the use of their hips. After the rider becomes comfortable with sitting up and pedaling, have them practice stretching and taking hand ups from another rider or a person standing on the side of the road. When the rider can demonstrate competence doing simple activities, have them try simple stretches, like holding their arms up in the air or out to either side.

Object of this drill: During long rides, breakaways, team time trials and when chasing down riders, it may become necessary to stretch on the bike in order to avoid back cramps. Relieving the tension in tired muscles can allow the rider to continue without having to slow down.



THROWING YOUR BIKE

Minimum number of participants: 1

Materials needed: A piece of chalk to draw a finish line and an empty stretch of road, a long parking lot or any paved surface with enough room for a rider to get up to race speed safely.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. This will require standing over the bike with both feet on the ground and their hands on the drops. Standing over the bike with the front wheel just behind the practice finish line, with hands on the drops, have the rider lean over the handlebars as if they were sprinting. Be sure the handlebars are pulled close to the rider's chest. Using a gentle push, have the rider move the bike forward between their legs until the seat makes contact with the rider. Emphasize that this movement is making the bike move beneath the rider, independent of their body's movement. Once the rider is able to move the bike properly while standing over it, have them practice making the same motion while riding. This skill only works when out of the saddle, with hands in the drops and with the shoulders over the handlebars. Begin by having the rider moving on the bike heading for the practice finish line. Have the rider stand up on the pedals and rock the bike forward using just their arms. It will be easier to see the actual effect of throwing their bike when the rider is moving slower. Once the rider demonstrates proper technique, have them repeat the drill at higher speeds. Timing is absolutely essential for properly throwing the bike. The rider should be encouraged to make practicing this skill a regular part of their training rides, so that they develop good timing.

Object of this drill: The finish of many races has come down to whose front wheel was across the finish line one inch ahead of everyone else. Properly throwing the bike at the finish line can add as much as one foot lead on the opposing rider. That one foot may mean the difference between victory and just placing.

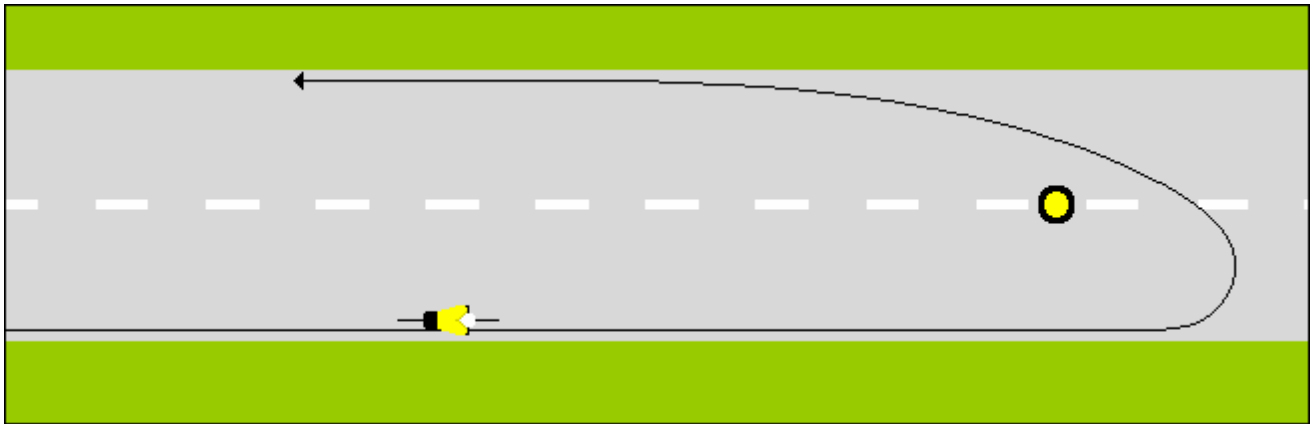
TIME TRIAL START AND TURN AROUND

Minimum number of participants: 1

Materials needed: A flat well paved surface such as an untrafficked road or a very long parking lot, chalk for drawing a starting and finishing line, a turn around cone and an observer.

Instructions: Begin this drill by having the rider walk through it first to understand what is expected and avoid possible crashing. Riders will start at the chalk line on the ground as if it were the start line of a race. Just before the turn around cone, they will reduce speed and gearing and make the turn. Coming out of the turn, they will accelerate just like in a race and return to the starting line. Encourage the riders to follow the pattern shown in the illustration, by making the largest percentage of the turn around on the same side of the road they are approaching the cone on.

Object of this drill: During a race, riders may be able to improve their overall time by improving their start and turn around.



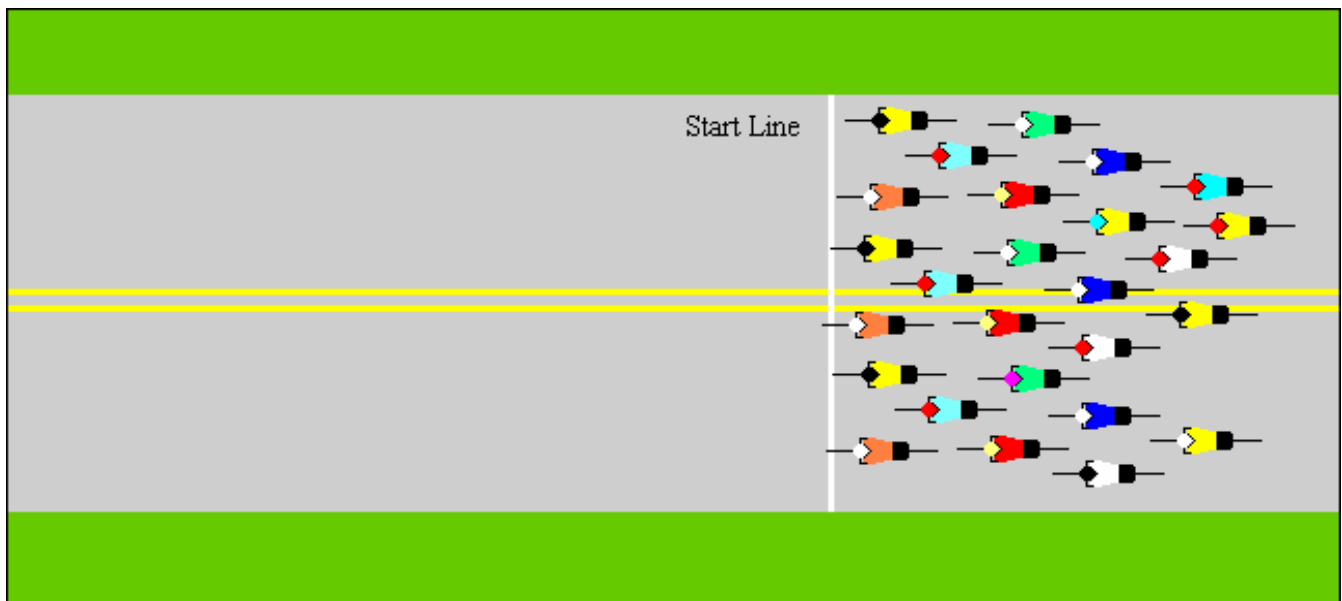
RACE START DRILL

Minimum number of participants: 6

Materials needed: A piece of chalk to draw a starting line, a flat, well paved surface such as an untrafficked road or a parking lot. It would be good if there are curbs on either side of the road.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riders will simulate the act of starting a road race or criterium. By practicing different gear combinations and starting positions riders may be able to improve how they begin a race. Walk the riders through the actual procedure used by officials prior to starting a race. Make sure the riders do not have both feet on the pedals, holding on to each other. Arrange the riders in the road just as they would be for a real race. Have them start and proceed down the road for a short distance at race speed. Repeat this game until the riders demonstrate effective skills.

Object of this drill: At the beginning of a race a rider may lose time or position in the field by making a bad start. By practice they may be able to make a better start. The rider must learn not to panic at the beginning of the race in the event that they cannot get their feet attached to the pedals or some other starting problem.





Real world applications. Notice how the Pepsi Team is always in the first row.

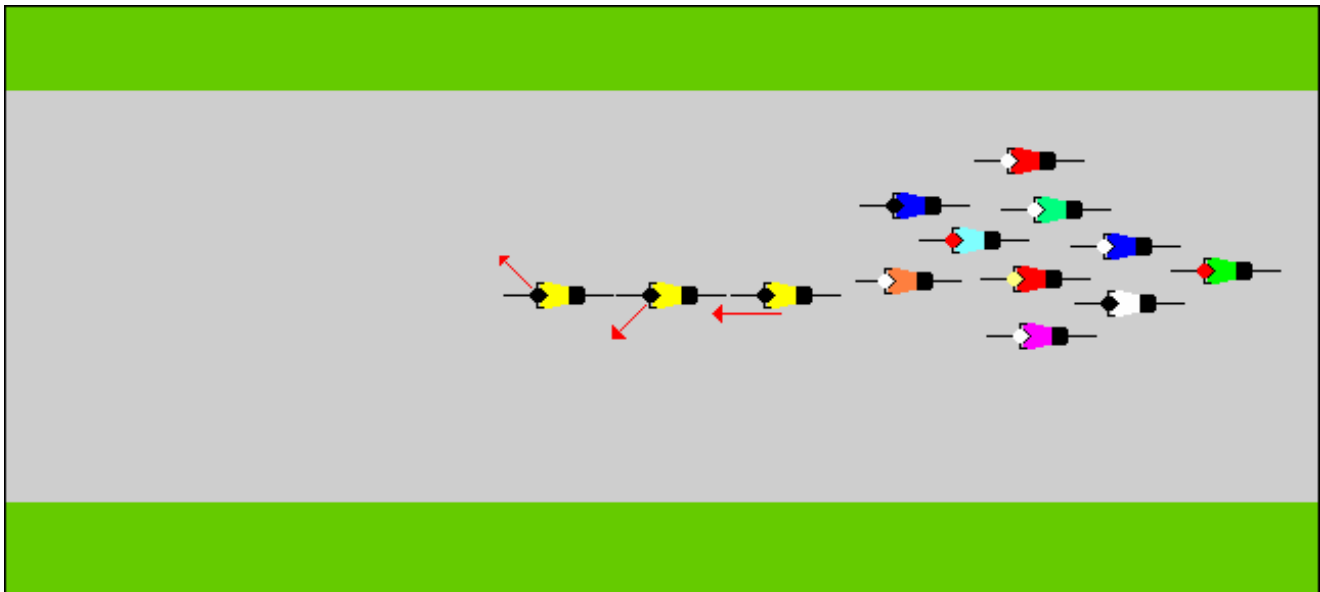
SPRINT LEAD OUT

Minimum number of participants: 3

Materials needed: A flat, well paved surface such as an untrafficked road or a very long parking lot, a chalk finish line and an observer.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. This drill should be practiced first in the grass. Riders will race for the chalk line on the ground as if it were the finish line of a race. Just before the line, they will pull the sprinter for the finish line and drop off to either side. Thus blocking any following riders that would normally be nearby in a race. It is very important that the riders discuss in what direction they will be pulling off to avoid causing confusion or a crash.

Object of this drill: During a race, riders may be in a position to win right at the finish line. Without a good lead out, they may not achieve the speed necessary to win. In addition, having teammates block right before the line will help eliminate some of the competition.



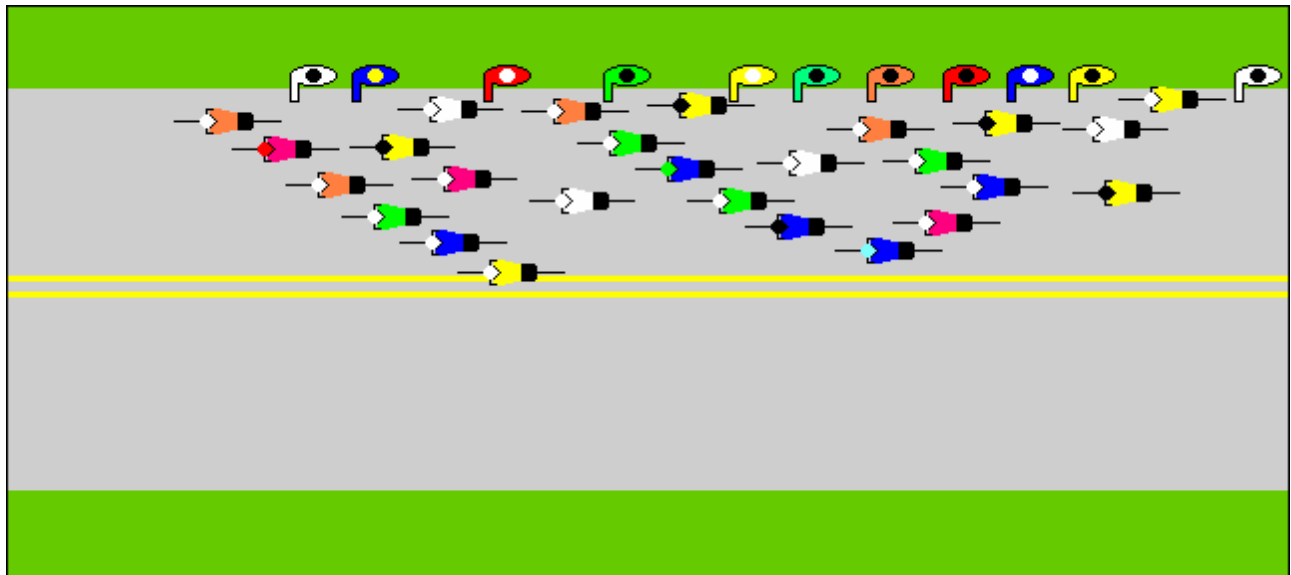
FEED ZONE FRENZY

Minimum number of participants: 6

Materials needed: 2 water bottles for every rider involved. One filled and one empty and one person to hand up bottles for each group of two riders.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riders are divided into groups of two and each rider is given an empty water bottle. Proper bottle handling technique should be demonstrated and practiced by all. The person giving the water bottle should hold the bottle from the top with their fingers firmly grasping the bottle as it hangs below their hand. The bottle should be held in the right hand, with the arm extended completely toward the center of the road while facing the direction from which the rider is approaching. The rider grabs the bottle in a downward motion from the hand of the person holding it and pulls the bottle toward their chest, to insure a firm grasp. The bottle is then placed in the cage on the bike. This game should not be played before the riders have demonstrated how to ride without holding onto the handlebars. The riders are assigned a feed zone person to hand them a full water bottle as they ride through. Make sure the people giving out the water bottles stay out of the road as much as possible. All the riders must get a full water bottle and give it to the coach at a designated location beyond the feed zone. One group of two will be given the assignment of attacking just before the feed zone, in order to create chaos in the feed zone.

Object of this drill: In a race, the riders will have to deal with dozens of people all attempting to get water bottles at once. Dropped bottles and clumsy riders can create a dangerous environment. The riders must be prepared to handle all this and still get their water bottle. A standard tactic is to attack in the feed zone and the riders must be ready for this as well.



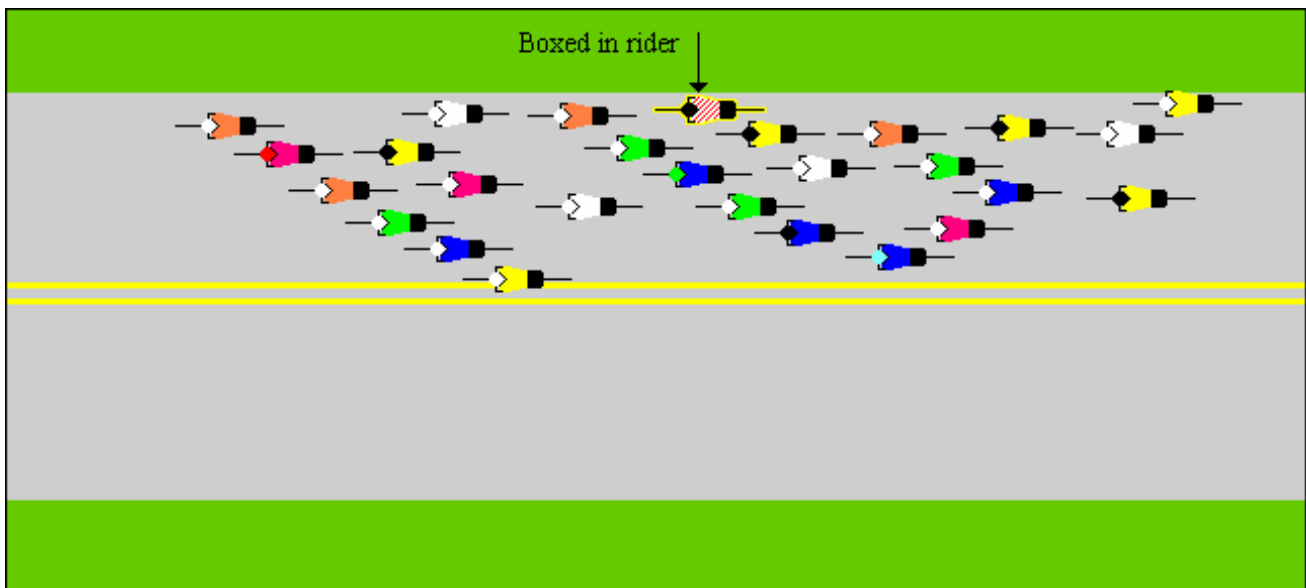
BLOCK OUT THE COMPETITION DRILL

Minimum number of participants: 6

Materials needed: A flat well paved surface such as an untrafficked road or a very long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Riders will group together like a field in a race. The riders from each team take turns blocking out a rider from another team. During the course of the block their teammate will attack. The simulation ends as soon as a gap is created. Riders from the other teams then take up the attackers role.

Object of this drill: During a race, any attempt to attack should be coupled with a block to aid the attack. Riders may be able to improve their overall race performance by better understanding how to block out the competition. It is important to emphasize to the riders that blocking is a legitimate and common tactic. However, riders who are being blocked will not appreciate being blocked and may express their dissatisfaction. Teach the riders not to stop blocking just because the rider being blocked gets upset. Good sportsmanship dictates that you accept the fact that you are being blocked and look for a chance to avoid being blocked as soon as possible. Foul language or displays of bad temper will only serve to make for bad feelings throughout the peloton.



PUSHING A TEAMMATE FROM BEHIND

Minimum number of participants: 4

Materials needed: A straight road with little or no traffic or a long parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Have all the riders shift into the small chainring and a cog somewhere in the middle of the freewheel. Pedaling along at a slow speed, have the riders get into pairs, side by side. If the rider is right handed, they will be pushing with their right hand. If they are left handed, they will be pushing with their left hand. The rider doing the pushing drops just slightly behind the rider to be pushed and places their open hand against the riders back. The rider being pushed should stop pedaling and allow the rider pushing them to keep them moving. Have the rider push for about 100 feet and then shove the rider away from them. Be sure to practice this on foot first, because the effort required to actually push a rider away will cause the pusher's bicycle to change direction abruptly. The riders then reverse roles and repeat the drill. When the riders feel comfortable doing this with their dominant hand, have them do it with their other hand. Repeat this drill until all the riders feel comfortable doing it with either hand. Now have the entire group form an echelon with each rider pushing the rider ahead of them. When the riders feel comfortable doing this at a low speed, have them increase their pace gradually. Be sure all riders remain in contact with each other continuously.

Object of this drill: There are times in a race or training session when a rider may be having difficulty or have to relieve themselves on the move. By being able to keep moving at speed, the rider can remain in the field until their situation changes. This also helps give the riders greater confidence in their cycling skills. It also show the riders how much effort is required to actually push someone else and how unstable their bicycle can become when pushing.

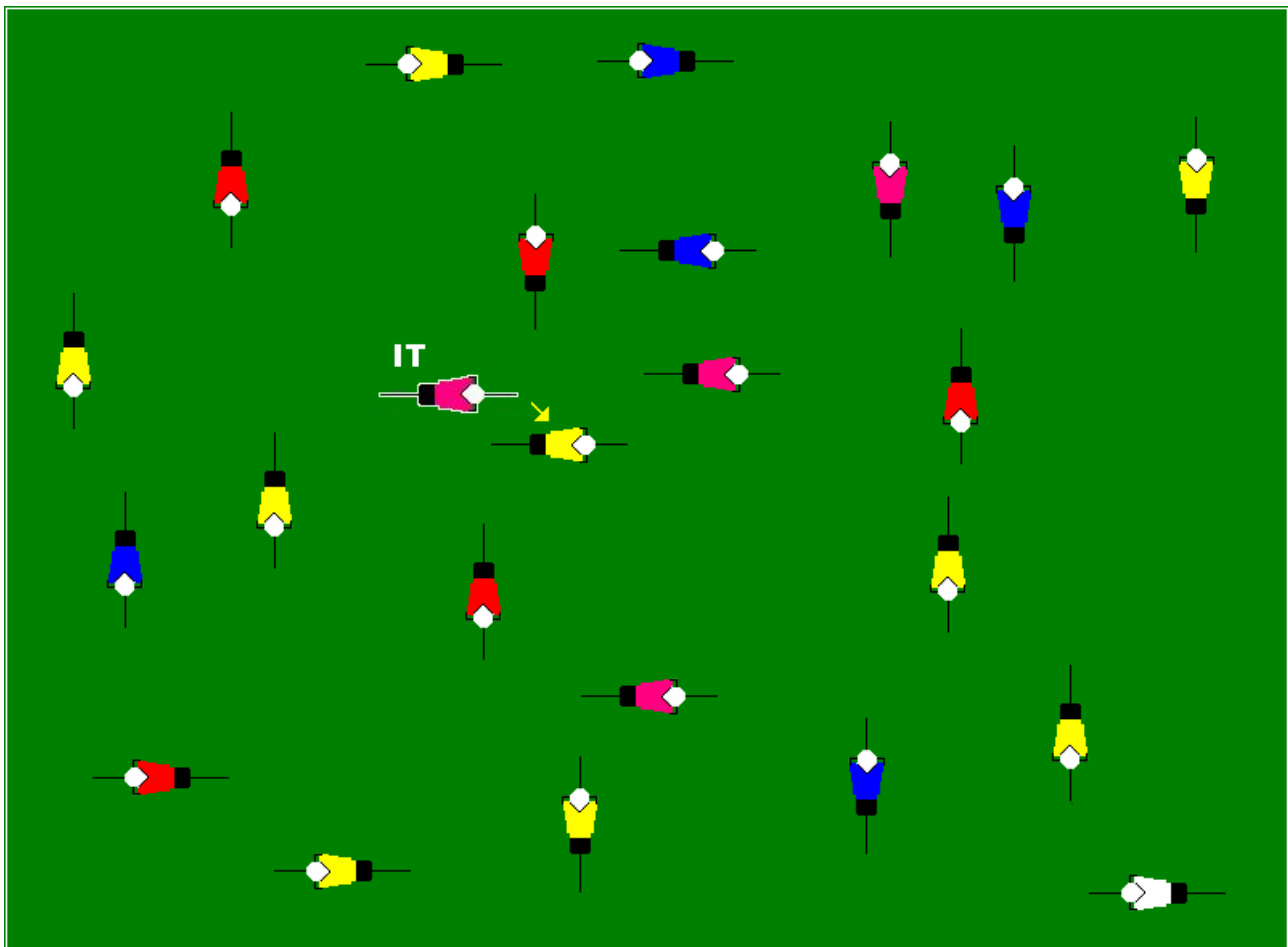
BICYCLE TAG

Minimum number of participants: 6

Materials needed: A flat grassy area such as a football or baseball field with a square area 20' x 20' marked off on the ground.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. The riders must keep their hands on the handlebars and their feet on the pedals. Using the skills learned in the previous drills and games, one rider is designated as "it". They must attempt to tag another rider without going out of the square. If a rider is tagged, touches the ground or goes out of the square while attempting to avoid being tagged, they are "it". That rider must find a different rider to tag or force out of the square. The game goes on for 5 minutes or until the riders are ready to go on to the next skill drill.

Object of this drill: During a race with a large field, such as a points race on the track or a criterium, riders will have to deal with physical contact. Not knowing what to do can lead to a crash. The more competent a rider is on their bike, the safer they are.



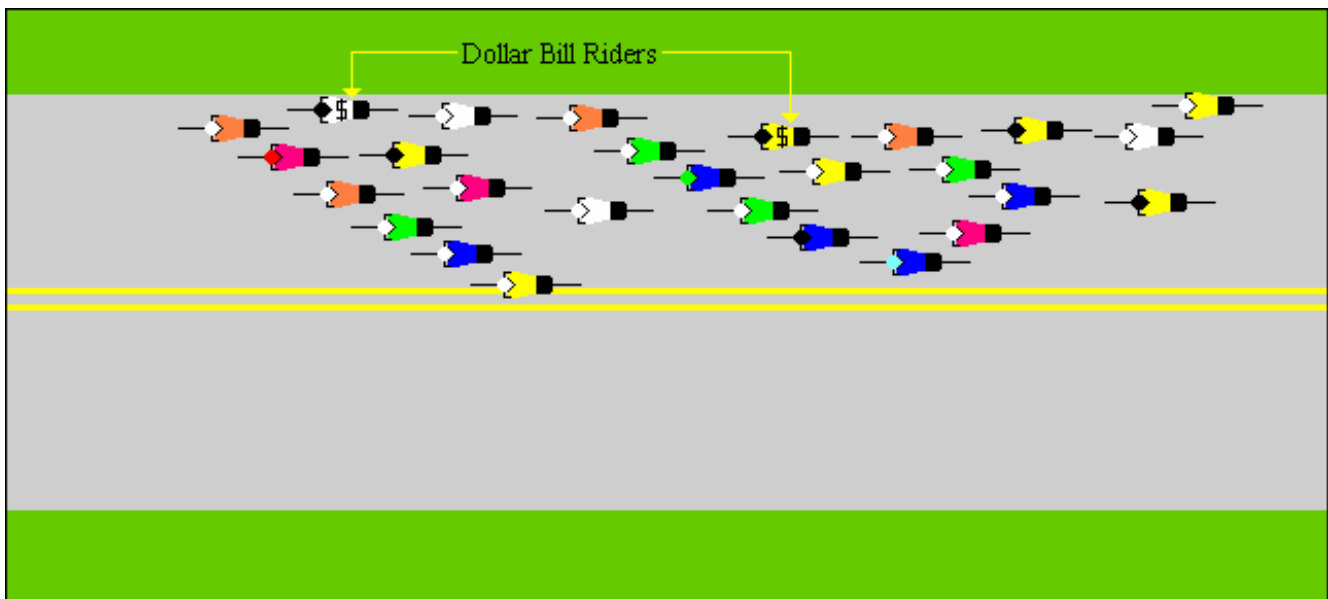
GRAB THE DOLLAR

Minimum number of participants: 6

Materials needed: A untrafficked road or a very large parking lot and one dollar bill for each three riders.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. The riders are divided into groups of three. One rider is designated as the dollar bill rider. All the riders should be in the small chainring and a cog in the middle of the freewheel. No shifting allowed. The dollar bill rider must stay seated on the dollar bill, with at least half the dollar bill sticking out. They cannot use their hands to keep the dollar or prevent other riders from taking it. The teammates job is to prevent the other teams riders from getting the dollar bill. Riders are given a set time and course. One team begins ahead of the other. The trailing team has the burden of getting the leading teams dollar before the time runs out or they reach the end of the course. Riders must always be facing in a forward direction and cannot turn around. If they cannot get the other teams dollar before the end, they lose.

Object of this drill: Just as in the square games, the idea is for the rider to use the bike handling skills they have learned. The addition of the dollar bill problem forces the riders to use some form of tactics to overcome the other team.



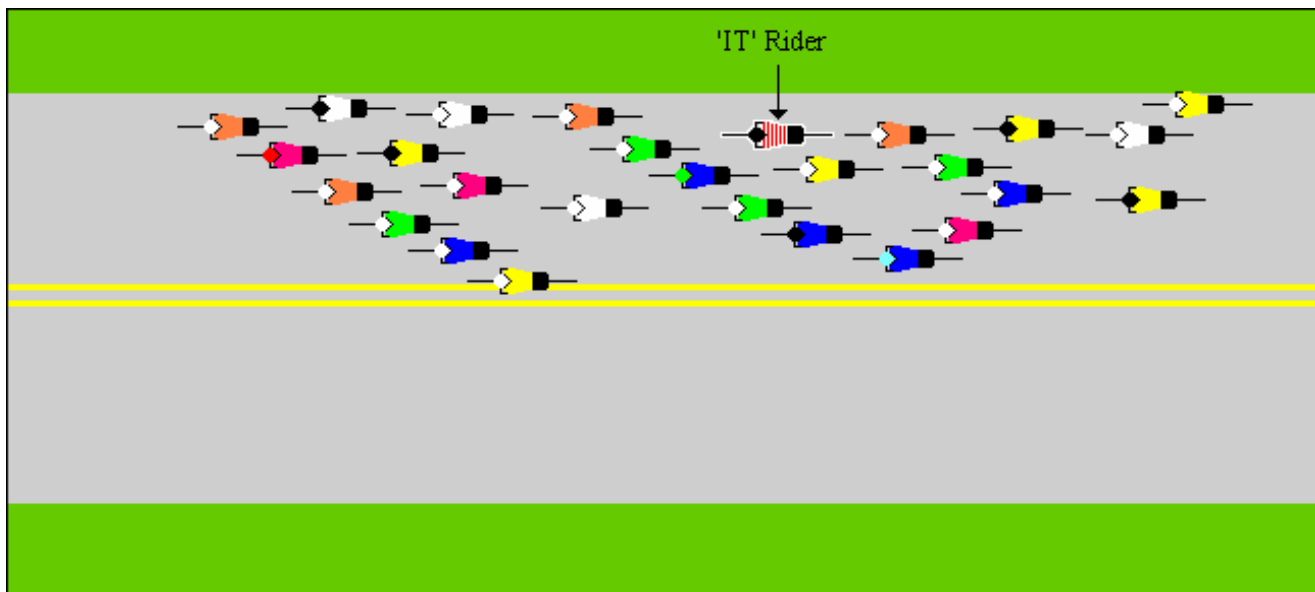
ROAD RACE TAG

Minimum number of participants: 6

Materials needed: A flat, untrafficked road course similar to a criterium course or very large parking lot.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. One rider is designated as being IT. The object of the game is to make someone else IT before reaching the finish line of the race course. If the course is within a parking lot, have a set number of laps and follow the basic guide lines of a criterium. It is a good idea to have the riders learn the previous games before playing this game, to insure proper bike handling skills. Once a rider is tagged, they cannot retag the person who tagged them. They must tag someone else.

Object of this drill: During a race, riders may need to change their position in order to stay in contact with the contenders for a win. They may also be trying to shake a rider from their wheel. They may be trying to avoid being blocked in by opposing riders. This can require constantly weaving between other riders in order to stay with the right people. If the riders do not practice these skills ahead of time, they may either cause a crash or miss their chance to get in the right spot for the finish.



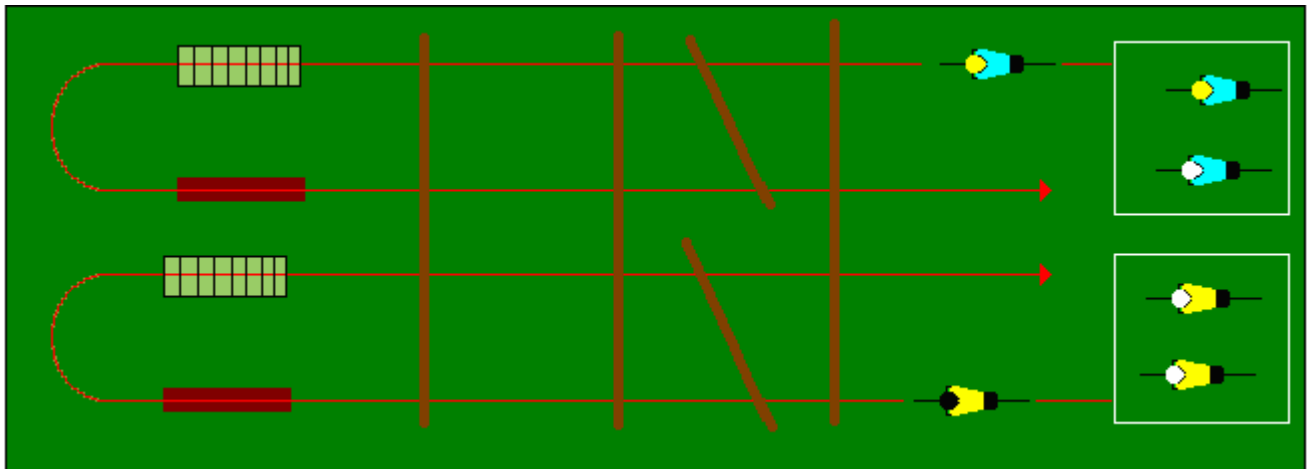
PONY EXPRESS

Minimum number of participants: 4

Materials needed: A flat grassy area such as a football or baseball field and several low objects such as railroad ties, curbstones or empty cardboard boxes.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. The basic game is a cyclo-cross race on a very small course. Riders practice getting off their bikes while moving. Lifting their bike onto their shoulder and carrying it over an obstacle. They then remount their bikes and proceed to the next obstacle until they return to the starting point. They then tag the next person from their team, who proceeds through the same course. Riders continue until everyone from each team has completed the course. The team with the fastest time wins.

Object of this drill: To teach the riders cyclo-cross skills.



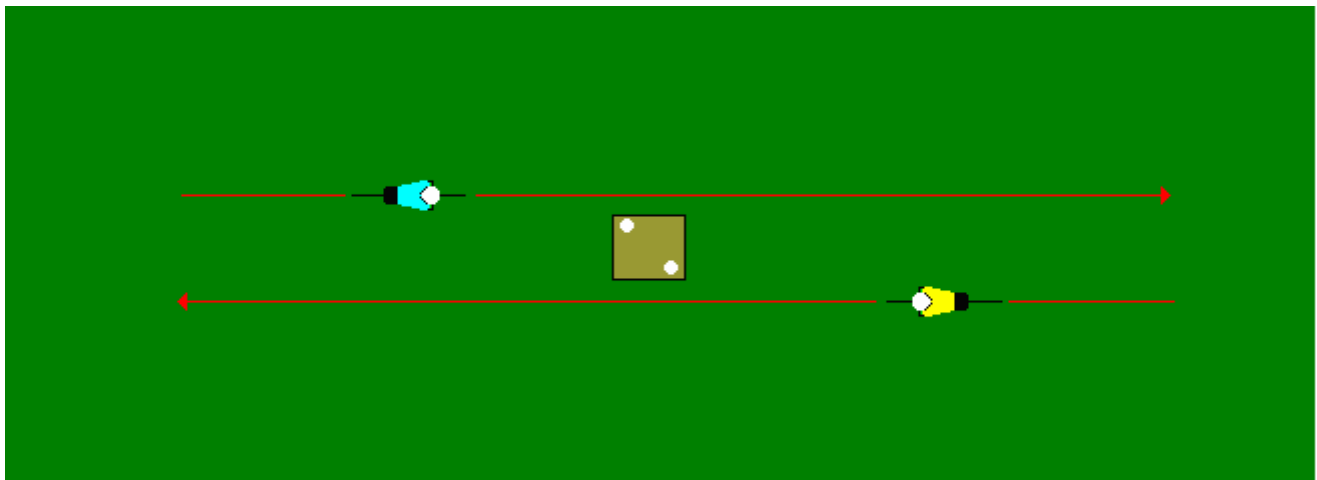
PICK UP THE WATERBOTTLE

Minimum number of participants: 2

Materials needed: A flat grassy area such as a football or baseball field, a stand that can be adjusted for height or several cardboard boxes that can be stacked and a large waterbottle filled with water.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. Place the water bottle on a stand or a stack of cardboard boxes about 3 feet tall flat in the middle of an open area. The riders approach the water bottle and attempt to pick it up without crashing. Each time the riders retrieve the bottle successfully, the level is lowered by 6 inches. The drill continues until either no one can reach the bottle without crashing, or all the riders can pick the bottle up from the ground.

Object of this drill: The idea is to build the riders confidence in their ability to handle their bike under any conditions. If they can manage to ride along the ground and pick up a water bottle without crashing, they will be able to remain upright on the bike during hazardous conditions.



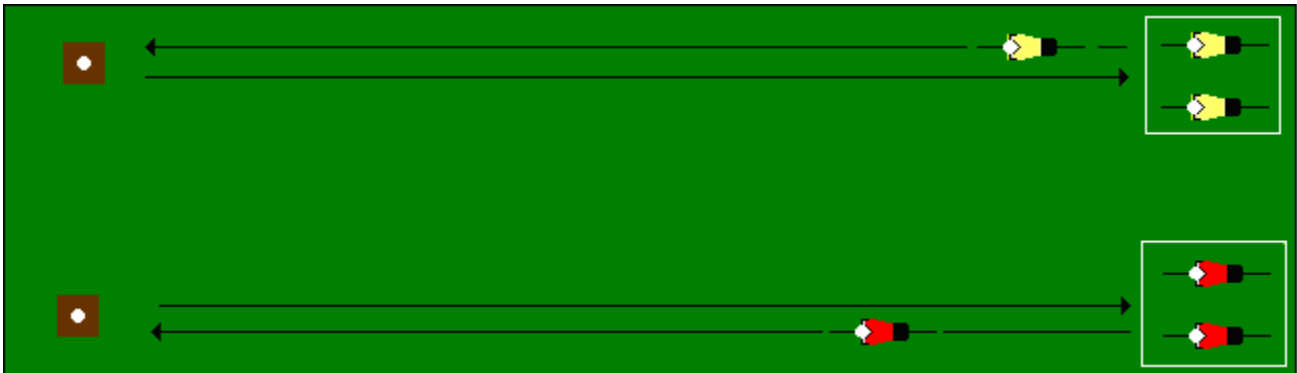
PICK UP THE WATERBOTTLE RELAY

Minimum number of participants: 4

Materials needed: A flat grassy area such as a football or baseball field, two stands that can be adjusted for height or several cardboard boxes that can be stacked and four large water bottles filled with water.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Start with all the riders pedaling in the small chainring and a cog somewhere in the middle of the freewheel. No shifting allowed. Set up two stands and two turn around points. Place a water bottle on each stand or a stack of cardboard boxes about 3 feet tall flat in the middle of an open area. The riders of each team approach their water bottle and attempt to pick it up without crashing. They then ride down to the turn around point and head back toward their teammates. On the way back they must put the water bottle back on the stand or cardboard boxes. They then proceed to where their teammates are waiting. Each time the riders retrieve the bottle successfully, the level is lowered by 6 inches. The next rider then proceeds to repeat what the first rider did. The drill continues until either no one can reach the bottle without crashing, or all the riders can pick the bottle up from the ground. The first team to complete the course wins.

Object of this drill: The idea is to build the riders confidence in their ability to handle their bike under any conditions. If they can manage to ride along the ground and pick up a water bottle without crashing, they will be able to remain upright on the bike during hazardous conditions.



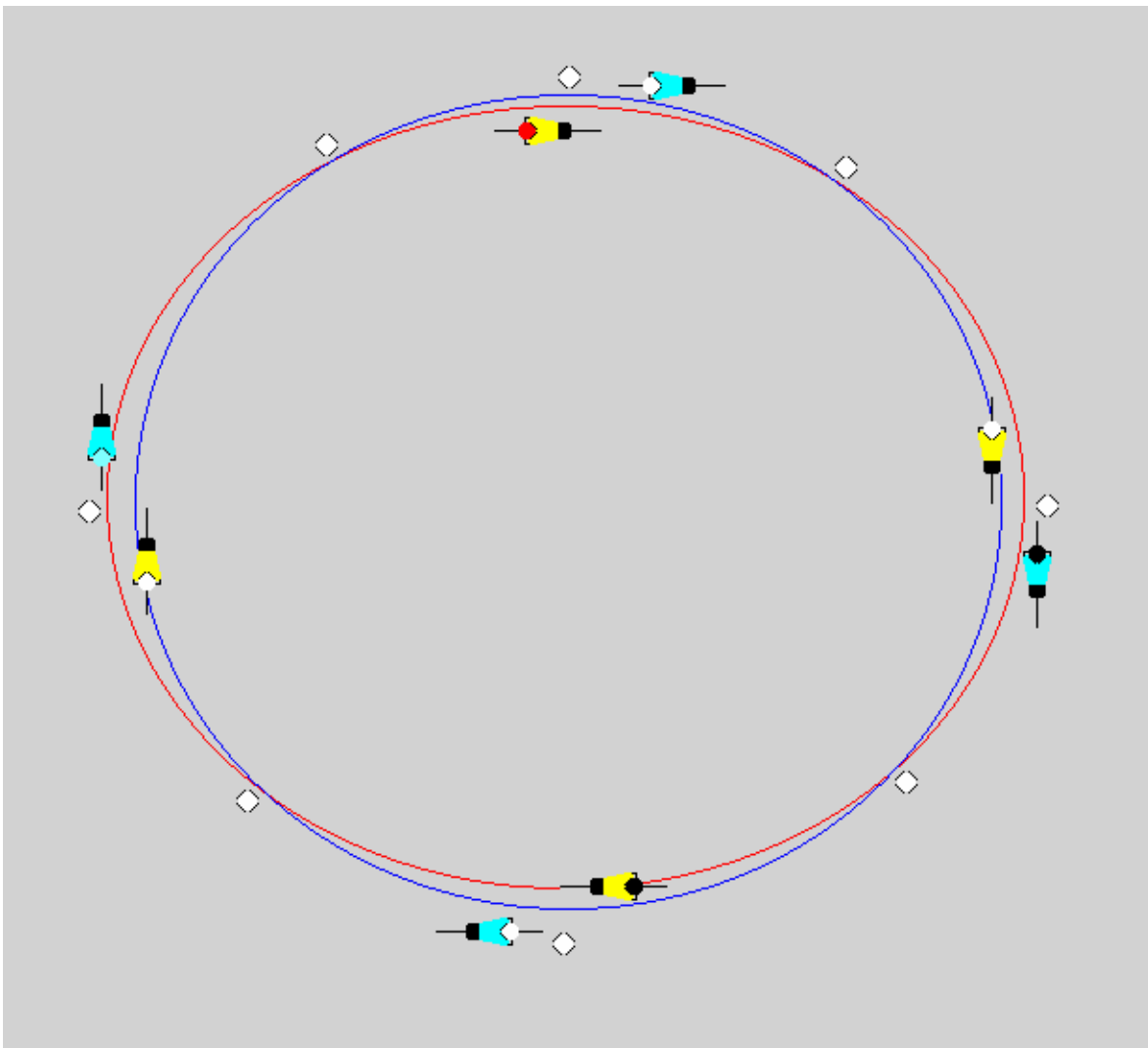
INTERTWINED PACELINE IN A CIRCLE

Minimum number of participants: 8

Materials needed: A flat grassy area such as a football or baseball field and a supply of water bottles.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Separate the riders into two groups (i.e. A + B) and have them line up around the outside of the circle in alternating order, (A, B, A, B....) all heading in the same direction, either clockwise or counterclockwise. Have all the riders begin riding around the circle and once they are evenly spaced, have one group (i.e. A) begin riding faster than the other group. As the fast riders overtake the slower riders, they will weave to the outside or inside of the slower riders.

Object of this drill: To build the riders concentration, skills and confidence.



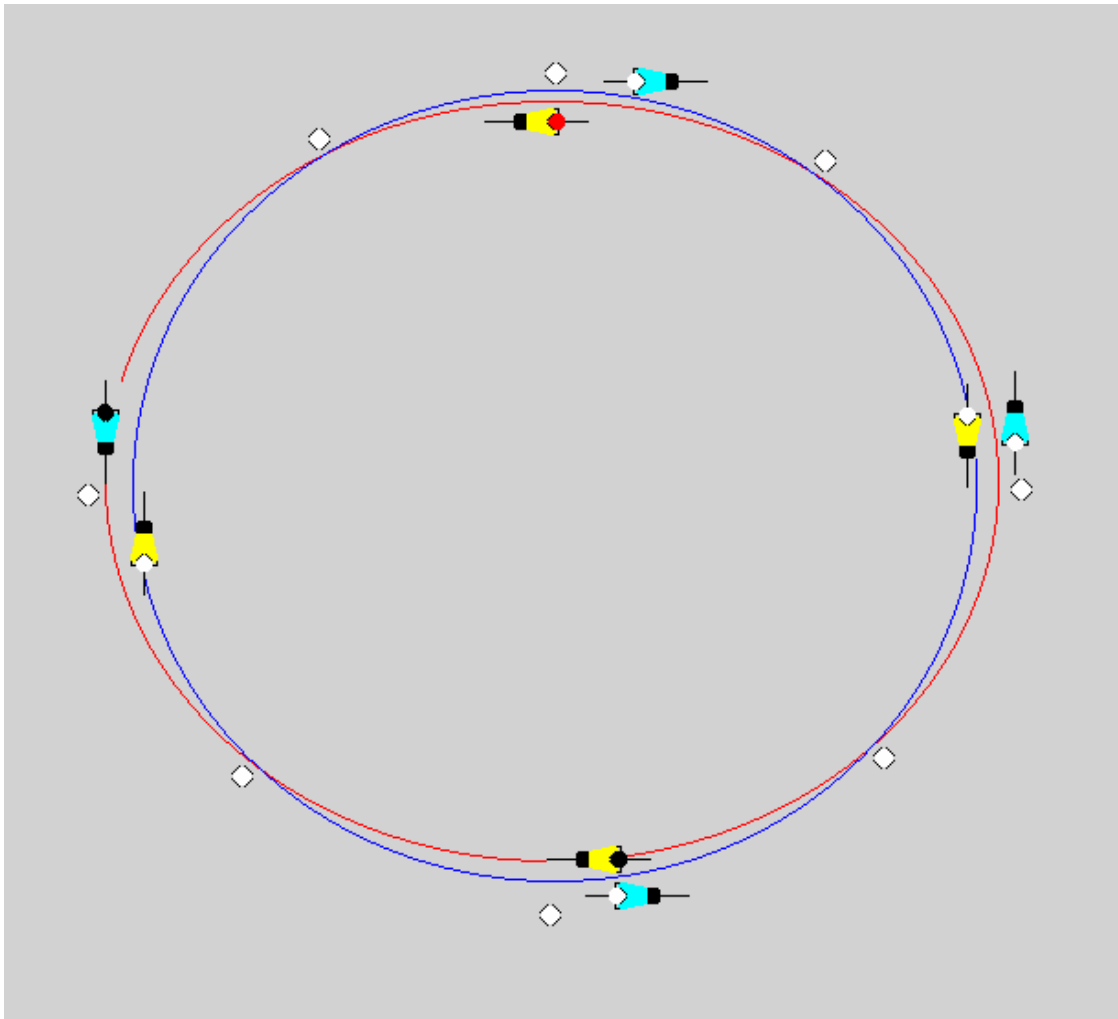
HEAD ON PACELINE IN A CIRCLE

Minimum number of participants: 8

Materials needed: A flat grassy area such as a football or baseball field and a supply of water bottles.

Instructions: Begin this drill by having the riders walk through it first to understand what is expected and avoid possible crashing. Lay out a large circle of water bottles on the ground. The larger the circle, the easier it will be to learn this game. Have six riders stand over their bikes, facing clockwise around the circle. The remaining two riders will begin riding in a circular paceline in the opposite direction as the six stationary riders. The two riders will weave around the stationary six riders, first to the right, then to the left. Once the two riders have gotten used to going between the six stationary riders, those riders will begin riding in a circle. The two riders will continue weaving through the other six riders as they ride in a circle.

Object of this drill: To increase the riders concentration, bike handling skills and confidence.



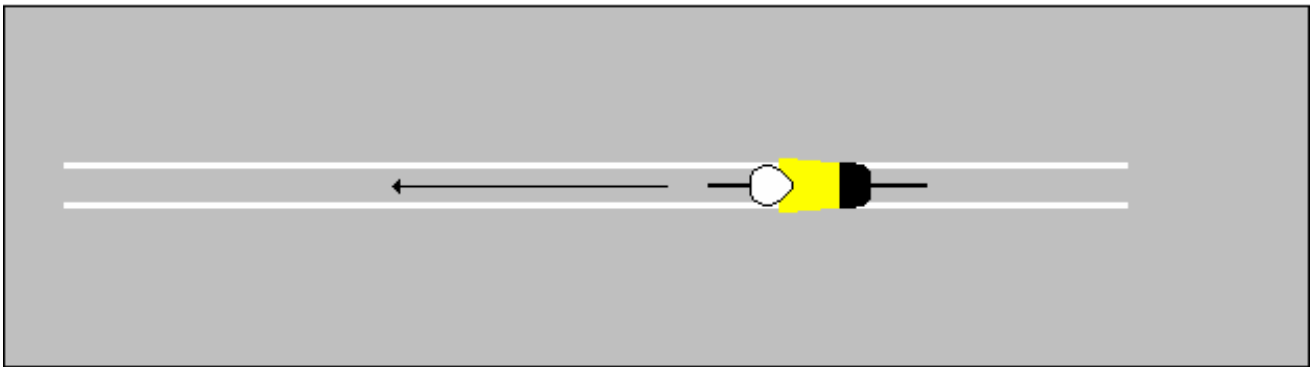
TRENCH WARFARE

Minimum number of participants: 2

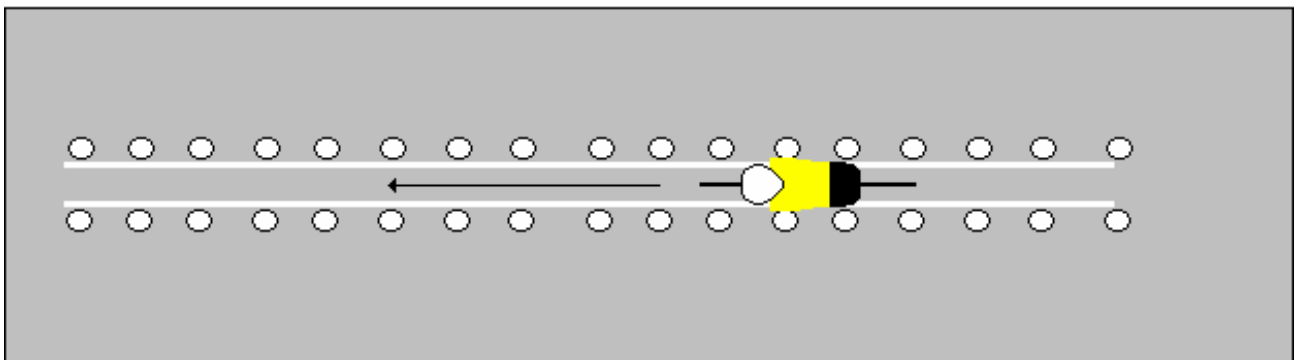
Materials needed: A flat well paved parking lot, chalk or a chalk line, 20 water bottles, 20 empty 12 pack cartons, a piece of wood 2' x 2" x 6".

Instructions:

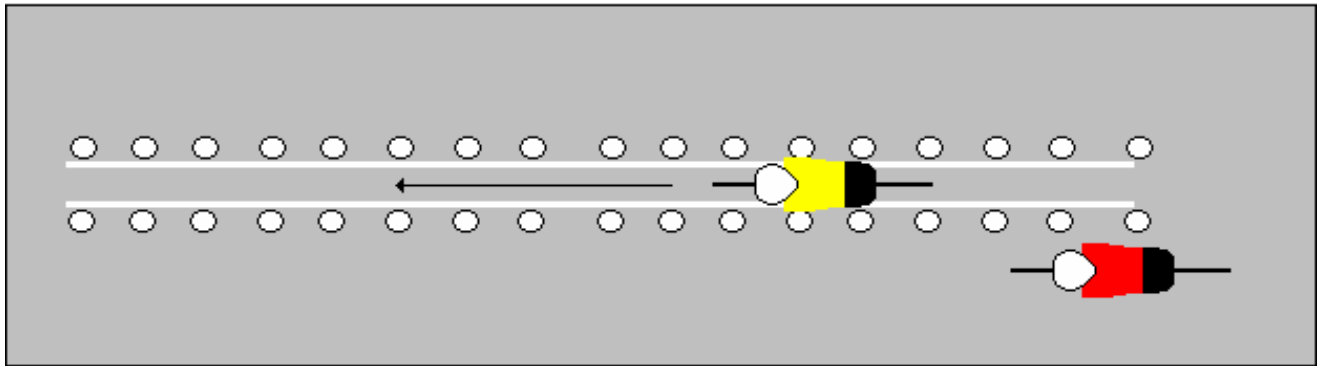
Part 1. Begin by making pair of lines 50 feet long and 4 inches apart, using either a chalk line or chalk and a long straight edge. Have the riders approach at speed and ride between the lines without crossing them. Practice until they can go the full length without going outside the lines. Hint: Have the riders look about 20 feet ahead instead of down at their front wheel.



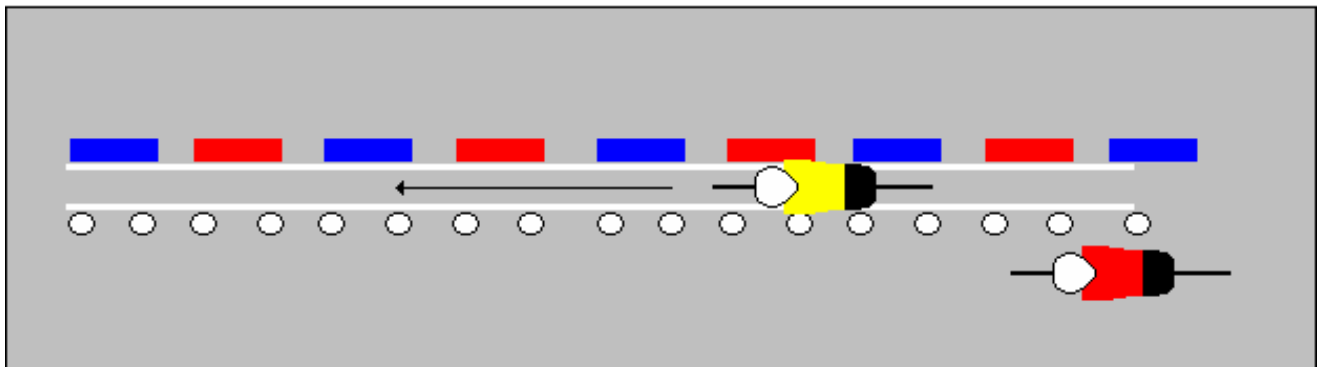
Part 2. When all the riders can navigate the chalk lines properly, add water bottles to either side of the chalk line, every 5 feet and 12 inches apart across the chalk lines. Have the riders approach at speed and ride between the lines without going out of the lines or knocking down any of the water bottles. Repeat until the riders can do it confidently.



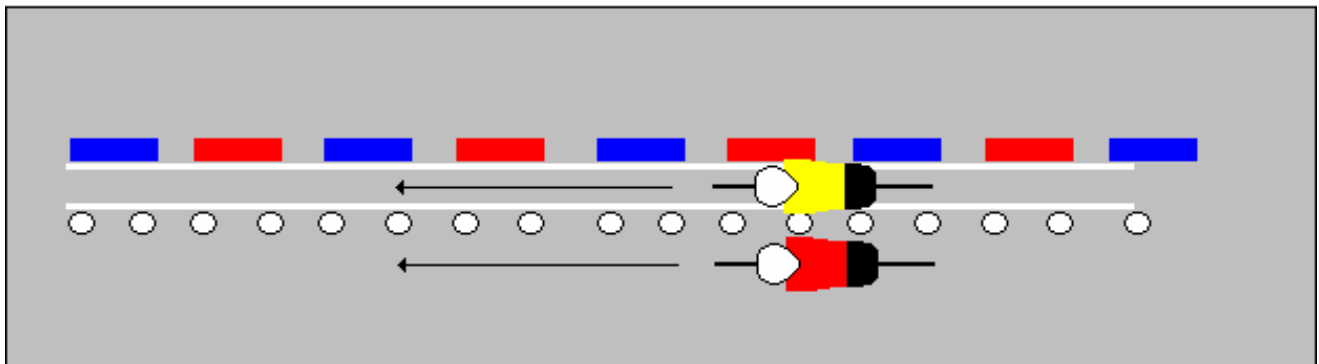
Part 3. When all the riders can navigate the chalk lines with the water bottles properly, add a rider straddling their bike to the beginning of the line of water bottles on the left side. The person's shoulder, hips and the bike's handlebars should be even with the outside edge of the first water bottle. Have the riders approach at speed and ride between the lines, knocking down any of the water bottles or hitting the person at the beginning. Repeat until the riders can do it confidently.



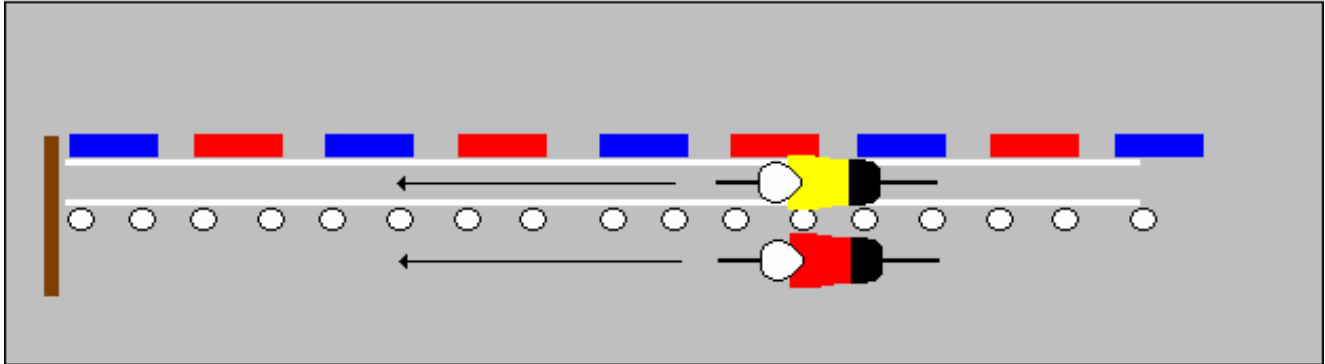
Part 4. When all the riders can navigate the chalk lines with the water bottles and a rider straddling a bike, replace the water bottles on the right side with the 20 empty 12 pack cartons placed end to end. Stand them up so the longest dimension runs parallel to the chalk lines and the widest dimension runs up and down. Have the riders approach at speed and ride between the lines without going out of the lines, knocking down any of the water bottles, empty pop cartons or hitting the person at the beginning. Repeat until the riders can do it confidently.



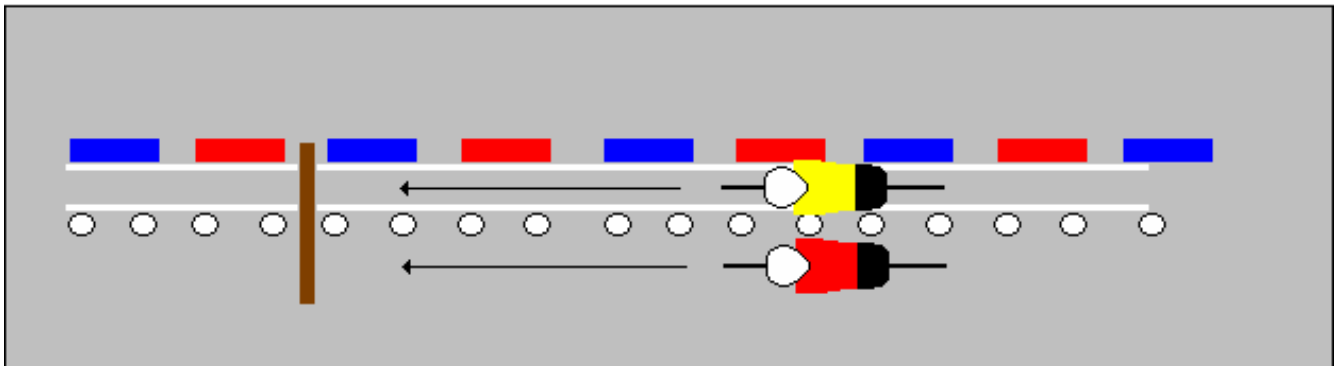
Part 5. When all the riders can navigate the chalk lines with the water bottles, empty pop cartons and a rider straddling a bike, replace the rider straddling their bike with a rider who actually pedals alongside during the entire run. That rider will stay on the left side of the rider going between the chalk lines and attempt to maintain shoulder or elbow contact with them the entire run. Have the riders approach at speed and ride between the lines without going out of the lines, knocking down any of the water bottles, empty pop cartons or the person on the other bike. Repeat until the riders can do it confidently.



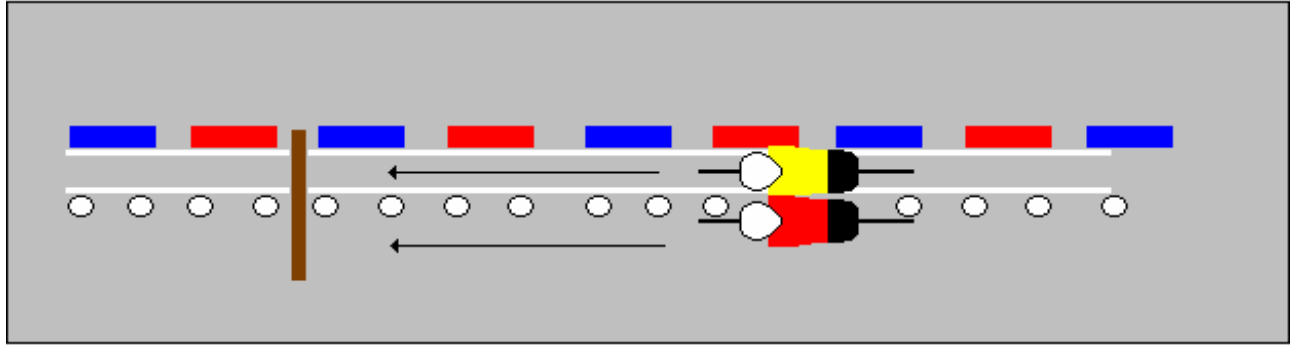
Part 6. When all the riders can navigate the chalk lines with the water bottles, empty pop cartons and a rider pedaling alongside them, place the 2 x2"x6" plank flat at the end of the chalk lines and have the rider proceed as before, but bunny hop the planing at the end. Have the riders approach at speed and ride between the lines without going out of the lines, knocking down any of the water bottles, empty pop cartons or the person on the other bike and successfully bunny hop the plank Repeat until the riders can do it confidently.



Part 7. when all the riders can navigate the chalk lines with the water bottles, empty pop cartons and a rider pedaling alongside them, place the 2'x2"x6" plank flat about half way through the chalk lines and have the rider proceed as before, but bunny hop the plank in the middle. Have the riders approach at speed and ride between the lines without going out of the lines, knocking down any of the water bottles, empty pop cartons or the person on the other bike and successfully bunny hop the plank Repeat until the riders can do it confidently.



Part 8. When all the riders can navigate the chalk lines with the water bottles, empty pop cartons and a rider pedaling alongside them, place the 2'x2"x6" plank standing on the 2 inch edge, so it is sticking up 6 inches about half way through the chalk lines and have the rider proceed as before, again bunny hopping the plank in the middle. Have the riders approach at speed and ride between the lines without going out of the lines, knocking down any of the water bottles, empty pop cartons or the person on the other bike and successfully bunny hop the plank. Repeat until the riders can do it confidently. Then have the following rider begin exerting a bit of force as they go. Repeat until all the riders can do it confidently.



Object of this drill: During the closing meters of a race, especially a criterium, riders can be squeezed into very tight quarters. Bikes and riders come in contact at high speeds. A rider who has the power to put in a good sprint finish may not do well if they lack the confidence to mix it up with the rest of the field at the end. This drill is designed to use what was learned in all the other drills and show how to survive the end of a race.