

USING YOUR GEARS

You have lots of gears so that you can always be in the right one. Use them!

Chainrings:

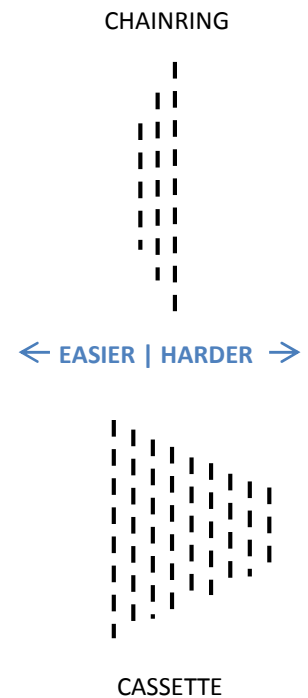
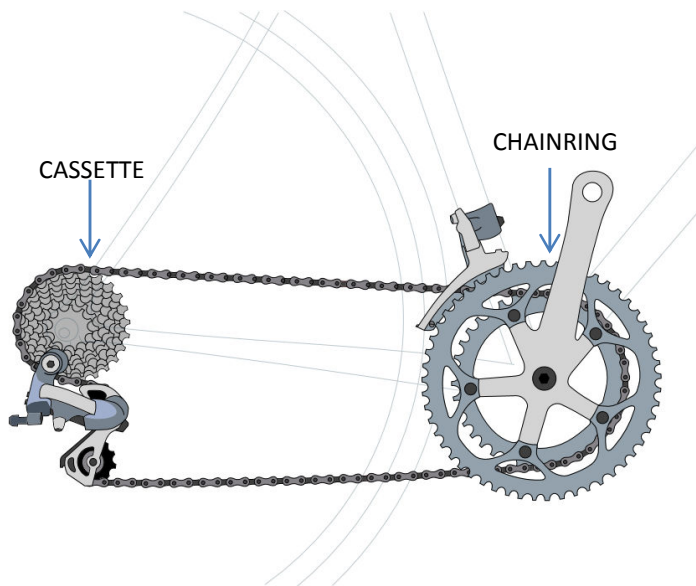
Chainrings are the gears in the front, those that you shift between with your left hand. You may have two of them (a “double”) or three (a “triple”).

- Smaller chainring = easier pedaling
- Bigger chainring = harder pedaling

Cassettes:

Cassettes are composed of gears in the back (aka “Cogs”), those that you shift between with your right hand.

- Smaller cog = harder pedaling
- Bigger cog = easier pedaling

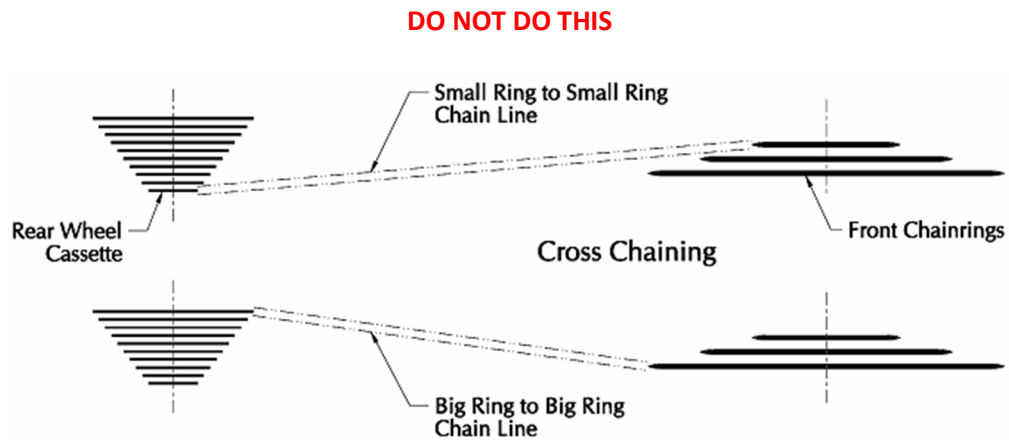


Finding the right gear

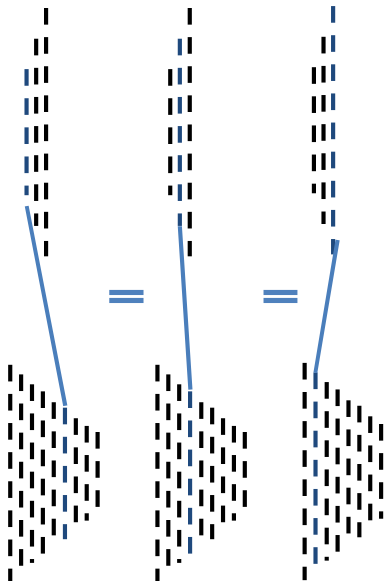
The combination of chainring and cassette placement of your chain determines (1) the distance your bike travels for each full rotation of the pedals (aka “Gear Inches”) and (2) the resistance you feel when pedaling.

Lesson 3 – GEARS, SPINNING, AND HILLS

- Note that everyone is different. The right gear for your buddy may or may not be the right gear for you on the same terrain. Experiment and find out what works for you in different riding conditions
- In general, try to use gear combinations that keep your chain as straight as possible
 - Combinations of large chainring + large cog and small chainring + small cog are known as “cross-chaining” and should be avoided because they are less efficient when pedaling and can also contribute to mechanical failures



In general, a 1-gear shift of a chainring is equivalent to a two-gear shift in the cassette:



Shift Early and Often

- Anticipate what gear you’ll need BEFORE you actually need it!
- As you approach a hill, downshift, and get into the gear combination that will work for you on that climb
- Do NOT try to shift gears when your chain is under load

Lesson 3 – GEARS, SPINNING, AND HILLS

- Do NOT attempt to shift the chain over too many cogs at once
- Do NOT move both shift levers at the same time

For more technical information on gears, please see the B-SIG riders guide, Sheldon Brown's online resources, or Dick Marr's book for DIY charts.

SPINNING

Spinning is about RPM (revolutions per minute, or "cadence"), not MPH

- Spinning gives you more bike control, especially on dirt or gravel
- If you spin, you will ride further with less effort
- The more you spin the more you reduce the risk of a physiological cycling injury
- Spinning helps you maintain a consistent heart rate

In general, try to use gear combinations that keep your chain as straight as possible to maintain 85- 95 RPM cadence on flat roads while keeping the pace of the group

- If your cyclometer has a cadence function, use it, trying to stay between 85 and 95 RPMs during regular riding
- If you don't have a cyclometer with a cadence function, learn what 85 to 95 RPMs feels like and stick to it
 - Count your cadence; 14 to 18 strokes in 10 seconds are what you're seeking
 - Use a song to pace yourself. Popular songs from various generations with approximately 90 beats per minute:
 - *Roar* – Katy Perry
 - *Demons* – Imagine Dragons
 - *Going Under* – Evanescence
 - *Irreplaceable* - Beyonce
 - *No Diggity* – Blackstreet & Dr. Dre
 - *In Your Eyes* – Peter Gabriel
 - *Modern Love* – David Bowie
 - *Piano Man* – Billy Joel
 - *Isn't She Lovely* – Stevie Wonder
 - *Me and Bobby McGee* – Janis Joplin

Spin at all times. Do NOT coast

- Keep your legs moving. It signals to other riders that you intend to continue moving. If you coast, the rider behind may think you are stopping, and brake. On a group ride, that creates havoc
- If you don't want to gain speed, you can pedal without putting power into the rear wheel (sometimes referred to as "soft-pedaling")

CLIMBING HILLS

Successful hill climbing depends on proper gearing and a proper riding style

Gearing on Climbs

- When climbing hills, change gears before you need to. There is no way to climb a long hill without reducing the gear as much as you can to keep spinning and to reduce lactic acid build-up in your muscles.
- Ideally the same cadence should be maintained from flat terrain to the hill, the gears and pressure of the foot on the pedal must be adjusted to accommodate the various stages of the hill
- As you approach the hill in a particular gear, you should shift to a lower gear as soon as the climb begins and your RPMs drop
- Continue shifting down to maintain your cadence until you find the gear in which you can spin up the climb. Shift BEFORE you need to reduce lactic acid build-up, which might occur if you are pushing too big of a gear
- At the top of the hill, increase the gearing to maintain the constant cadence and pedal down the hill. (Soft-pedal, do NOT coast on the descent.) Do not stop pedaling at the crest of the hill because riders behind you will have to slow down to avoid hitting your back wheel. Be courteous.

Climbing Styles

Each cyclist has a different climbing technique. Eddy Merckx sat down and had a running technique; Greg LeMond stood up and ran; Chris Froome spun at a very high cadence. All three of these guys have won more Tours de France than any of us likely will. The two main options are:

- Staying in the saddle, spinning
 - On steeper slopes, the spinning may become low cadence “mashing”
- Standing out of the saddle, as high as you can while keeping the bike straight

Helpful Hints for Hills

- If sitting, keep your weight in your rear end and focus on pedaling technique
 - Place your hands on the top of your handlebars, straightening your back
 - Turn the pedals in full circles, feeling the same amount of pressure all the way around
 - When come to the bottom of your pedal stroke, visualize scraping mud off the soles of your shoes (heel down and toes up)
- Don't stare at the hilltop, it's self-defeating and psychologically drains you. On the other hand, don't look at your feet. It is best to look a few yards ahead of you
- Get into a steady rhythm and look (carefully) at the scenery. Hills are often accompanied by beautiful views
- Breathe deeply and slowly

Lesson 3 – GEARS, SPINNING, AND HILLS

- As you are climbing, SMILE. Smiling helps us take in more air as we breathe
- Ride “through” the hill. Mentally, you must maintain 100% effort not just to the top of the hill, but until the point at which you have started the down slope. Which brings us to...

DESCENDING HILLS

- Concentrate on the road ahead
- Keep pedaling, helping dissipate any lactic acid build-up from the climb
- Keep your weight back by sliding your butt toward the back of the saddle or even off the back edge of the saddle
- When descending around a curve, keep the INSIDE pedal UP and the outside pedal down, to avoid scraping your pedal on the road – a potentially dangerous situation
 - For you downhill skiers, this turning technique is similar to that on skis
- Control your speed.
 - Brake by briefly applying the brakes (especially rear brake), quickly putting pressure on and off the brakes. This is called “feathering” the brakes.
 - Do not constantly apply brakes.
 - Slow down by raising your upper body, creating more wind resistance
 - Brake before turns, trying not to brake while in a turn
 - If you reach a speed that feels uncomfortable, gradually slow down. Do NOT jam on the brakes!
 - On steeper descents, move your hands to the drops of your handlebars
 - While this position will make you go faster, it gives you more control over the brakes because your hands have more leverage on the brake levers
- If you pass someone on a descent:
 - Don’t pass unless check for car traffic and you see that there is enough room for you to get by the cyclist ahead of you clearly, without jeopardizing you or the other riders
 - Be sure to yell “on your left” as loudly as possible so the rider in front knows not to swerve into your line
 - Pass, and move back to the right, out of traffic