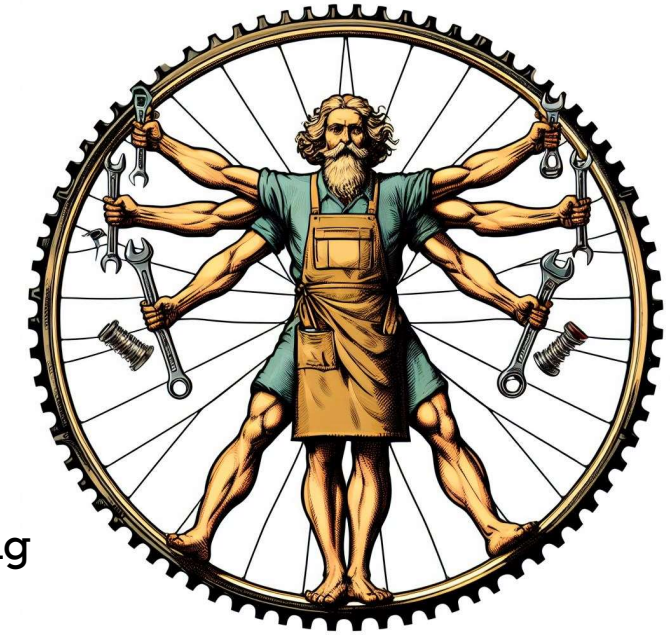
BICYCLE BASICS

Bicycle Maintenance, Fit, and Safety

COMMON CYCLE
COMMUNITY BICYCLE REPAIR

OVERVIEW

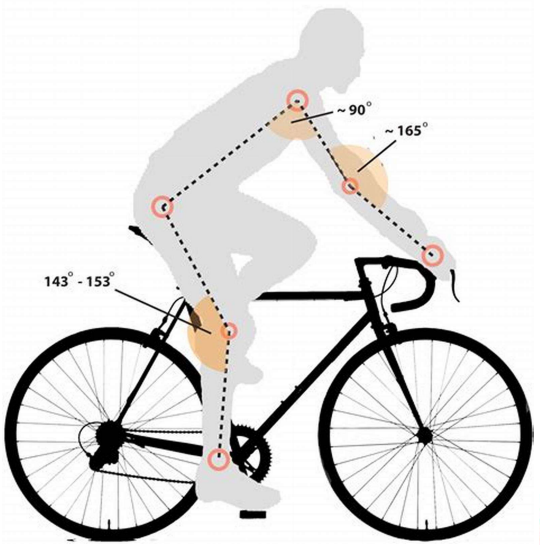


- 3 hour total course
- 90 minutes instruction / 90 minutes hands-on
- Intended for teens or adults, with minimal experience
- Course covers the basics of bicycle maintenance, shifting gears, fit, road safety and theft prevention
- Maintenance portion covers pre-ride checklist, flat repair, brake adjustment and pad replacement, chain and cable lubrication
- Course does not cover disc brakes, shifting, tubeless tires, front/rear suspensions, or service to wheel/steering/bottom bracket bearings

BASICS: BIKE FIT

Ergonomic grips

- Fit depends on personal preferences and type of riding
- A proper fit improves comfort and efficiency
- Seat height should allow nearly full extension of leg (slight bend to knee at lowest pedal position
- Reach can be adjusted by 1) moving seat fore/aft and 2) moving handlebars up/down
- Threaded stems can move up/down, threadless stems require flipping the stem and/or moving spacers
- Additional adjustments can be accomplished by changing stems or handlebars
- Hand/wrist discomfort can be addressed with padded gloves, ergonomic grips or handlebars which allow more hand positions



BASICS: SAFETY

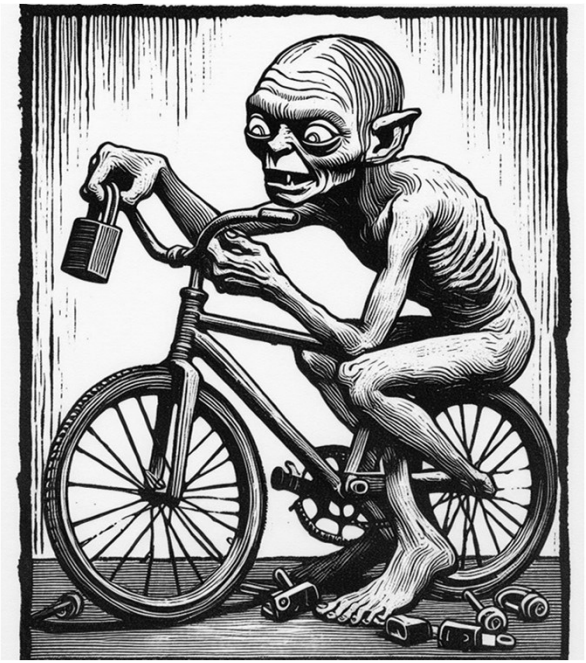
LMB

- LMB Pamphlet – "What every bicycle rider should know"
- Follow the same rules as vehicles if on the road
- Be visible and predictable
- Assume that drivers cannot do not see you
- Have situational awareness - anticipate
- Free rear view mirror from Walk Bike Washtenaw

WBW

- Defensive riding – assume the worst scenario and have a plan B
- In addition to bright clothing and lights, a bell/horn can help warn pedestrians or drivers as you approach
- Riding on the sidewalk avoids car traffic, but be particularly careful of driveway / intersection traffic, and also uneven pavement, dogs, pedestrians, branches

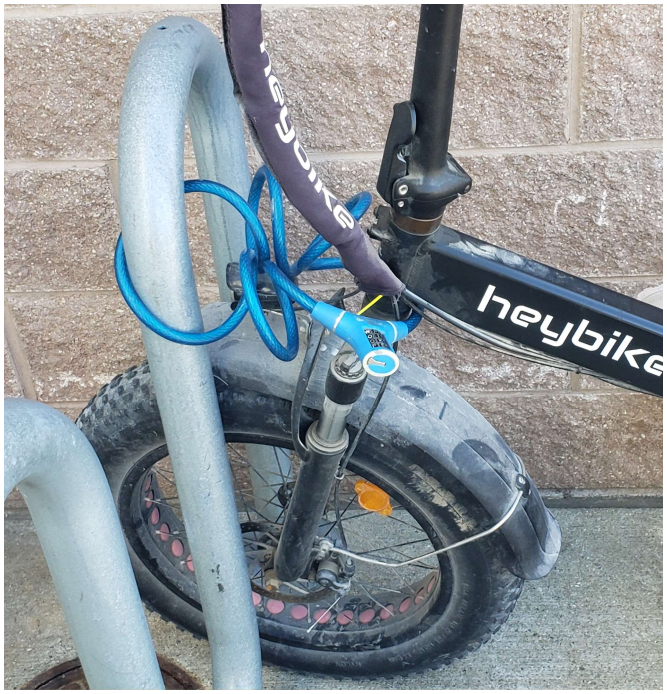
BASICS: THEFT PREVENTION



- Make your bicycle the least attractive target
- Lock should ALWAYS pass through the frame
- Lock should secure the front wheel, if quick release
- A high traffic area visible from multiple angles is best
- Cables do not offer as much security as other lock types
- Cable < Chain , Chain < Folding lock, Folding lock < U-Lock
- Security skewers can be used for wheels, cables can secure quick-release seats
- Multiple lock strategy – leave a second, heavier lock where you lock overnight

BIKE LOCK FAILS

Front / Rear wheel only



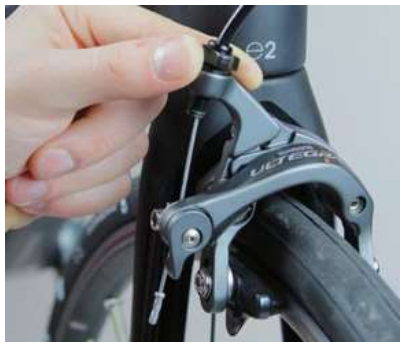
Cable can be pulled over wheel

U-Lock doesn't secure the bike, the cable does

BASICS: BRAKES

Barrel adjuster,
lock ring is narrow part

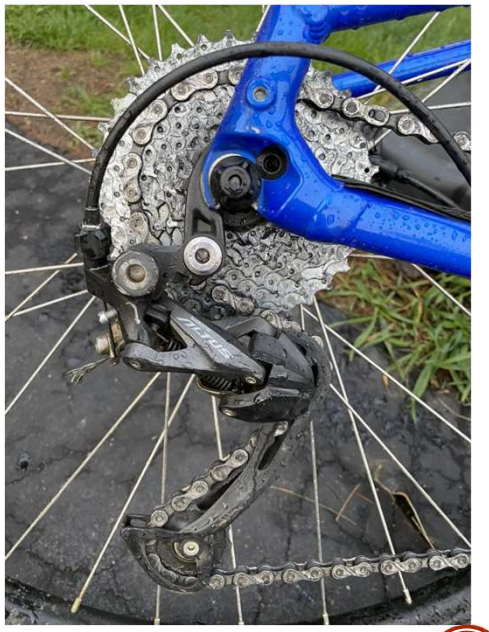
- Front brakes provide 70% of stopping power
- In a safe place, practice stopping hard with the front brakes
- Brake levers should never "bottom out"
- As the brake pads wear, turn the barrel adjusters outward tighten the brakes
- Make sure lock nut is tightened after adjusting



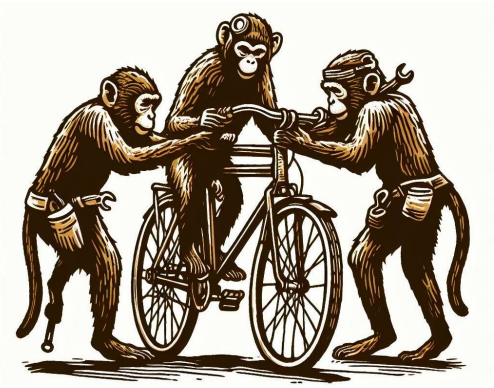
Inline adjuster

BASICS: SHIFTING

- Shifting gears lets you go uphill easier or downhill faster
- You must be in motion with the pedals moving to shift (except for internal gear hubs)
- Shift early – if you are pedaling hard, the torque will make it harder to shift, and you risk damage to the chain or gears
- Rear derailleurs shift more easily and reliably than the front
- A smaller chainring (front) or larger cog (rear) help you climb hills
- A larger chainring (front) or smaller cog (rear) help you go faster



BASICS: PRE-RIDE CHECK



Every ride: **A**ir **B**rake **C**hain **Q**uick

- Tire inflation - varies by tire width and ride weight – squish test
- Confirm brakes work. Do they rub?
- Check chain – is it rusty or dry?
- Are all quick releases closed?

Monthly or every ~10 rides

- Clean and lube chain
- Check tires for wear /damage
- Pedal / crank / steering / wheel bearings

~2-3 times a year

- Check wheel trueness/spoke tension

Chain lube

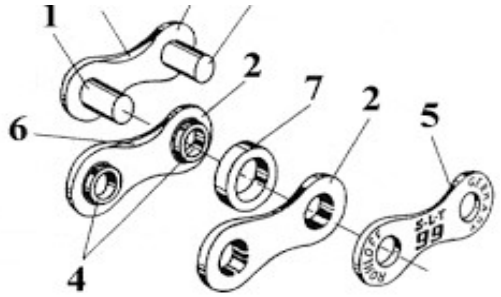
- Wet lube is sticky and attracts dust, but stays on in rain, etc. Ideal for commuters
- Dry lube will not attract dirt and is ideal for dirt roads or trails, or fair weather riding
- Clean old dirt / lube – remove any caked dirt
- Add drop of lube to each link – pedal backwards while gently dripping
- Continue pedaling to work lube into links
- (Optional) wipe off excess

REPAIR: FIXING A FLAT

- Remove wheel
- Remove tire – tire levers or spoons, be careful not to damage inner tube
- Check inside of tire for thorns, etc
- Patch or replace tube
- Fill tube with some air
- Insert tube in tire
- Mount tire on wheel
- Inflate tire – watch bead!
- Align wheel / tighten wheel

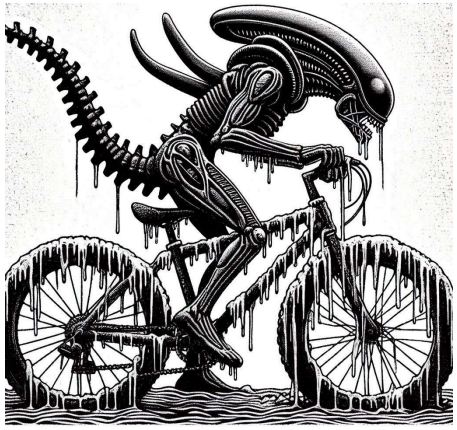
- Repairing a leaky inner tube
  - Find leak
  - Roughen tube with sandpaper
  - Apply cement
  - Allow to dry (important!)
  - Apply patch
  - Press with object (spoon, screwdriver handle, etc) to push out air bubbles and ensure adhesion

TUNE-UP: CHAIN LUBE



- Bike-specific lubes are preferred, but light household oils can also be used
- Wet lube stays on even in wet conditions, but is sticky and attracts dust. Ideal for city commuters
- Dry lube washes off in rain but will not attract dirt, ideal for dirt roads or trails
- WD-40 is OK as a cleaner, *never* use grease or heavy oils (bar oil, etc)
- Cosmetic rust is not an issue

1. Clean old or caked dirt / lube
2. Add drop of lube to each link – drip while pedaling backwards
3. Pedal or ride to work lube into links
4. (Optional) wipe off excess

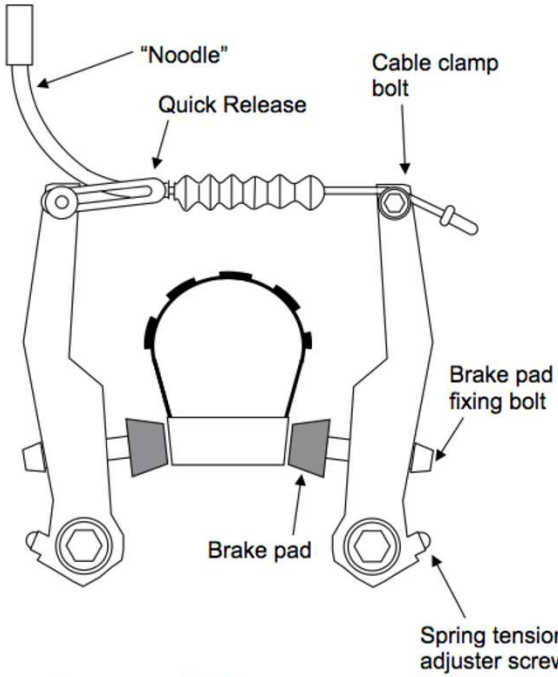


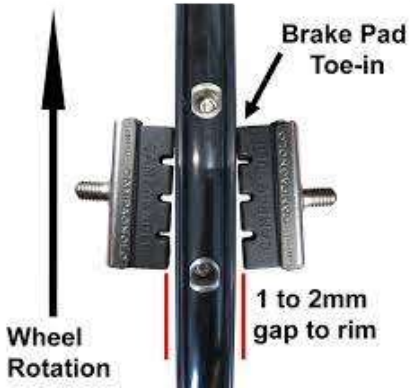
TUNE-UP: BRAKES

- Adjust brake pads as needed for proper contact with the rim
- Squealing brakes can be addressed by adding "toe-in"
- Older brakes may not have ability to "toe-in"
- Brake pads often have a groove indicating end of life
- The spring adjuster screw(s) will center the brakes
- Inspect rim for excessive wear (a concave surface)

Brake pads

New rim has flat surface





TOOLKIT

- https://aadl.org/cckit
- 5 kits available at downtown main library for 1 week loans
- **Contents**
  - Floor Pump with Presta/Schrader head
  - 7-piece Allen Wrench/ Hex Key Set
  - Allen Wrench 8mm
  - Adjustable Wrench 6-inch
  - 24mm Cassette Lockring Socket
  - Freewheel Remover
  - Chain Gauge
  - Chain Tool w/ Spoke Wrenches
  - Cable & Housing Cutter
  - Chain Whip/ Lockring Wrench
  - Pedal Wrench 24mm Socket
  - Phillips #2 Screwdriver
  - Flat 5.5mm Screwdriver
  - Tire Levers (2)
  - Sprocket Brush
  - Wire brushes (2)
  - Ferrules
  - Cable End Caps
  - Chain Oil
  - Grease
  - Patch Kit
  - Tool Kit Contents Guide
  - How to Fix a Flat Guide

HANDS-ON

COMMON CYCLE

COMMUNITY BICYCLE REPAIR
501(c)(3) NONPROFIT

- 90 minutes
- 3 stations – spend 30 minutes and rotate
    1. Wheel removal/flat fixing,
    2. Brake adjustment pad replacement,
    3. Bike fit / pre-ride check / changing gears

- Website: CommonCycle.org
- Drop by our community workspace!
- Every Sunday 11:00 a.m. to 3:00 p.m.
  416 W Huron St, Suite 11
  Ann Arbor, MI 48103