

Bicycle Mechanics and Repair Decal
Mechanical Engineering 98/198
Spring 11

Aleksey Shepelev

Jim Gao

Nick Koo

Henry Yi

About Citizen Cycle



We are a collection of individuals united by a common interest in biking and a desire to create a healthier, greener, and more vibrant community.

Learning Objectives

Safety

- Helmet use
- Theft Prevention
- Riding at night
- Defensive Riding
- Preventative Maintenance

Bike Mechanics

- Basic repair on the road
- Regular upkeep
- Advanced diagnosing and repair on all components of a bicycle

Outreach

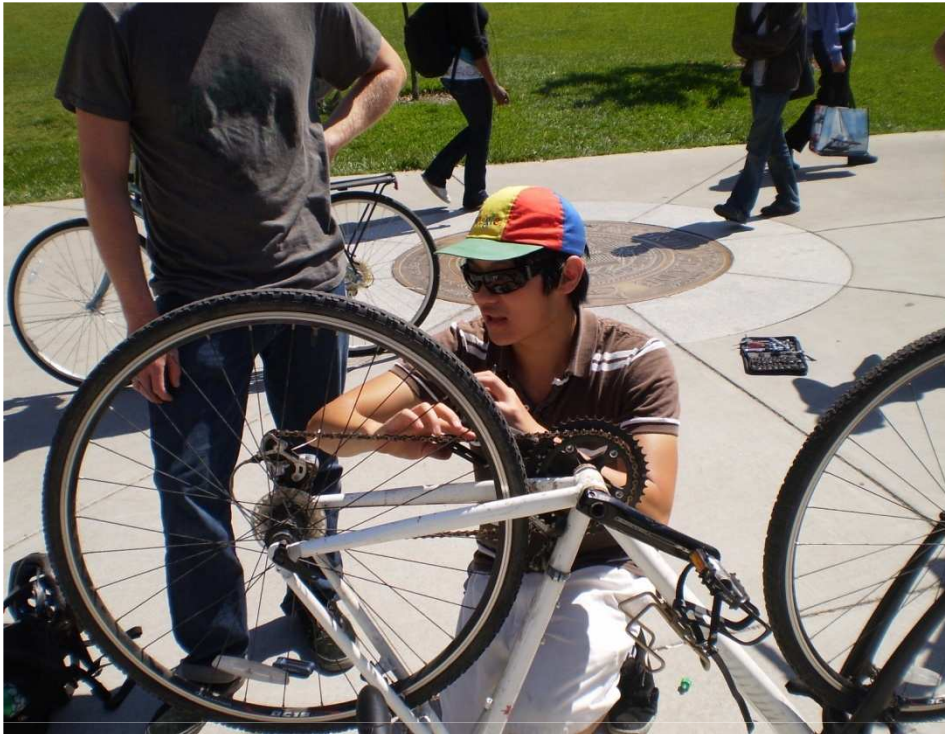
- Learn and teach others
- Explore ways to help the cycling community at Cal and in the Bay Area

About the Class

- 1 hr. lecture per week
 - Students will learn the theory behind the basics of bicycle repair and get hands on experience on all components.
- 1 hr. of field study every other week.
 - Students will practice and improve their repair skills at Bike Day, a campus outreach event designed to help other students with their bicycle problems.
- 1 page paper due at end of semester.

Field Study





Attendance and Grading

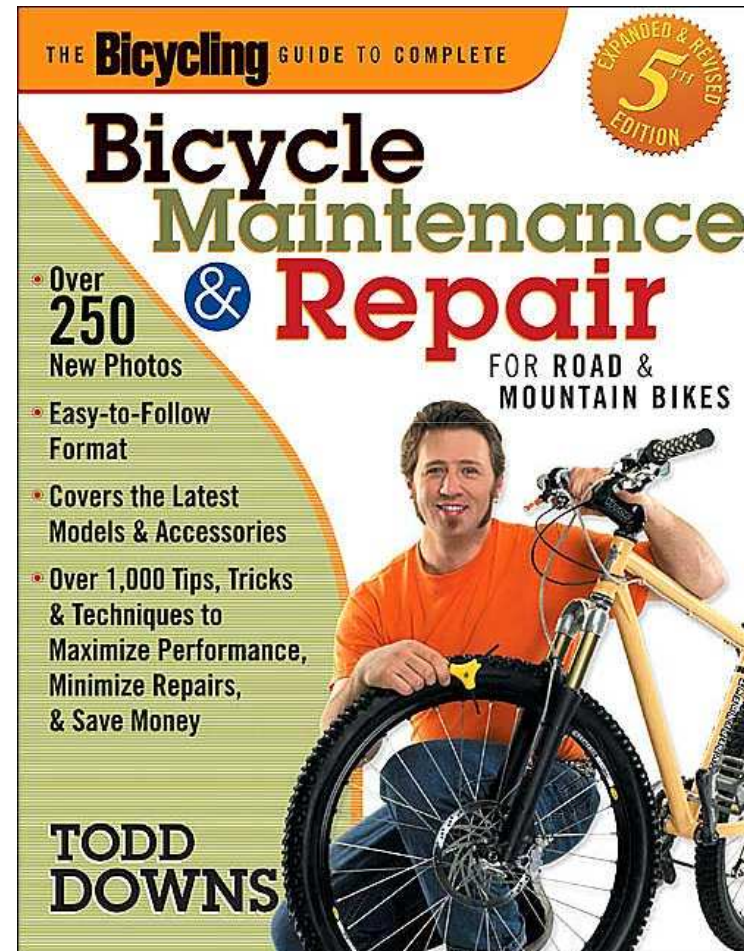
- 2 absences allowed without make-up
- Absences beyond 2 must be made up at Bike Day
- Maximum of 4 absences total
- Grading will be based on attendance and a short paper to be assigned towards the end of the semester

Textbooks

Not required but a great resource



Park Tool Big Blue Book of Bicycle Repair



Bicycling Magazine's Complete Guide to Bicycle Maintenance and Repair: For Road and Mountain Bikes

Resources Available Online



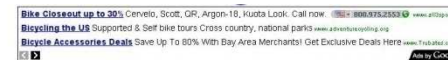
www.bicycletutor.com



www.parktool.com/blog/repair-help



www.bikewebsite.com



Sheldon Brown's Bicycle Technical Info

What's New at sheldonbrown.com

Select Language
Powered by Google Translate

The best place to start a search of this site is my Bicycle Glossary:

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

The Google search engine for this site also works very well:

Google Search sheldonbrown.com sheldonbrown.org

If you're looking for my bicycle articles, here are some quick links:

Articles by Sheldon Brown and others							
Home	Beginners	Brakes	Commuting Lights	Cyclic Computers	Do It Yourself	Essays	
Family Cycling	Fixed Gear Single-speed	Frames	Gears & Derivetrain	Bicycle Human	Bicycle Glossary	Bicycle Links	
Old Bikes	Repair Tips	Tandems	Tearing	What's New	Wheels	Sheldon Brown	

www.sheldonbrown.com

Bicycle Safety – Preventative Maintenance

Regularly check your bike ensure proper working order. This includes:

- Tightening and aligning brakes
- Tuning front and rear derailleurs
- Lubing the chain
- Proper cable tension
- Tightening bolts (esp. for you fixie riders)
- Inflating your tires



Helmets

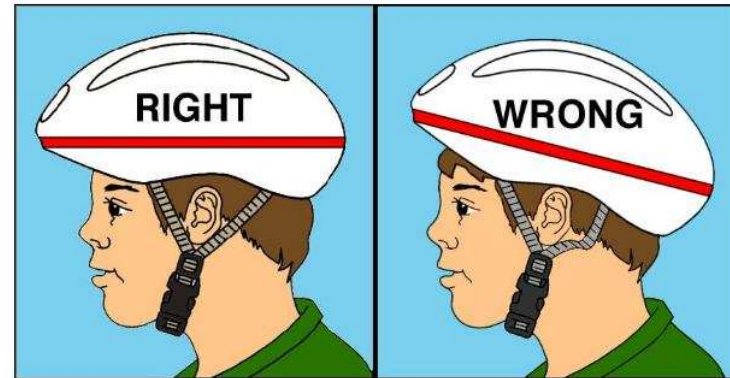
- Don't wear a hat under your helmet
- Don't wear headphones while riding

Bicycle Deaths by Helmet Use

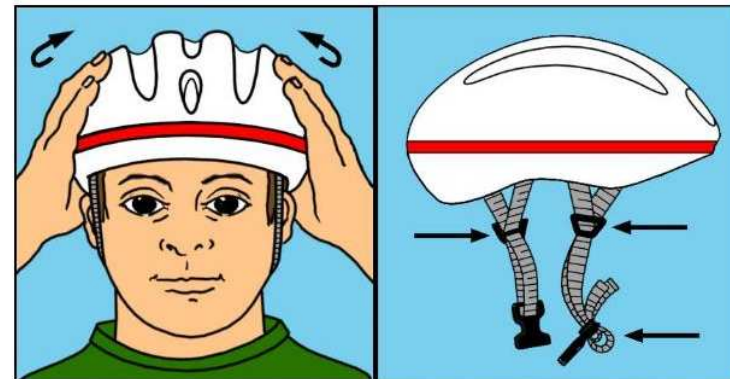
Year	No Helmet	Helmet	Total* Num
2004	602 (83%)	87 (12%)	722
2005	676 (86%)	77 (10%)	784
2006	730 (95%)	37 (5%)	669
2007	646 (92%)	50 (7%)	699
2008	653 (91%)	58 (8%)	714

www.helmets.org

Do you know the correct way to wear a helmet?



Wear the helmet flat atop your head, not tilted back at an angle!



Make sure the helmet fits snugly and does not obstruct your field of vision. Make sure the chin strap fits securely and that the buckle stays fastened.

<http://www.cpsc.gov/kids/kidsafety/correct.html>

Helmets are important for riders of all ages, especially because 86 percent of bicycle deaths are persons 16 and older.

Statistics from the [Insurance Institute for Highway Safety](http://www.insuranceinstitute.org) Fatality Facts: Bicycles - 2008

Demo!

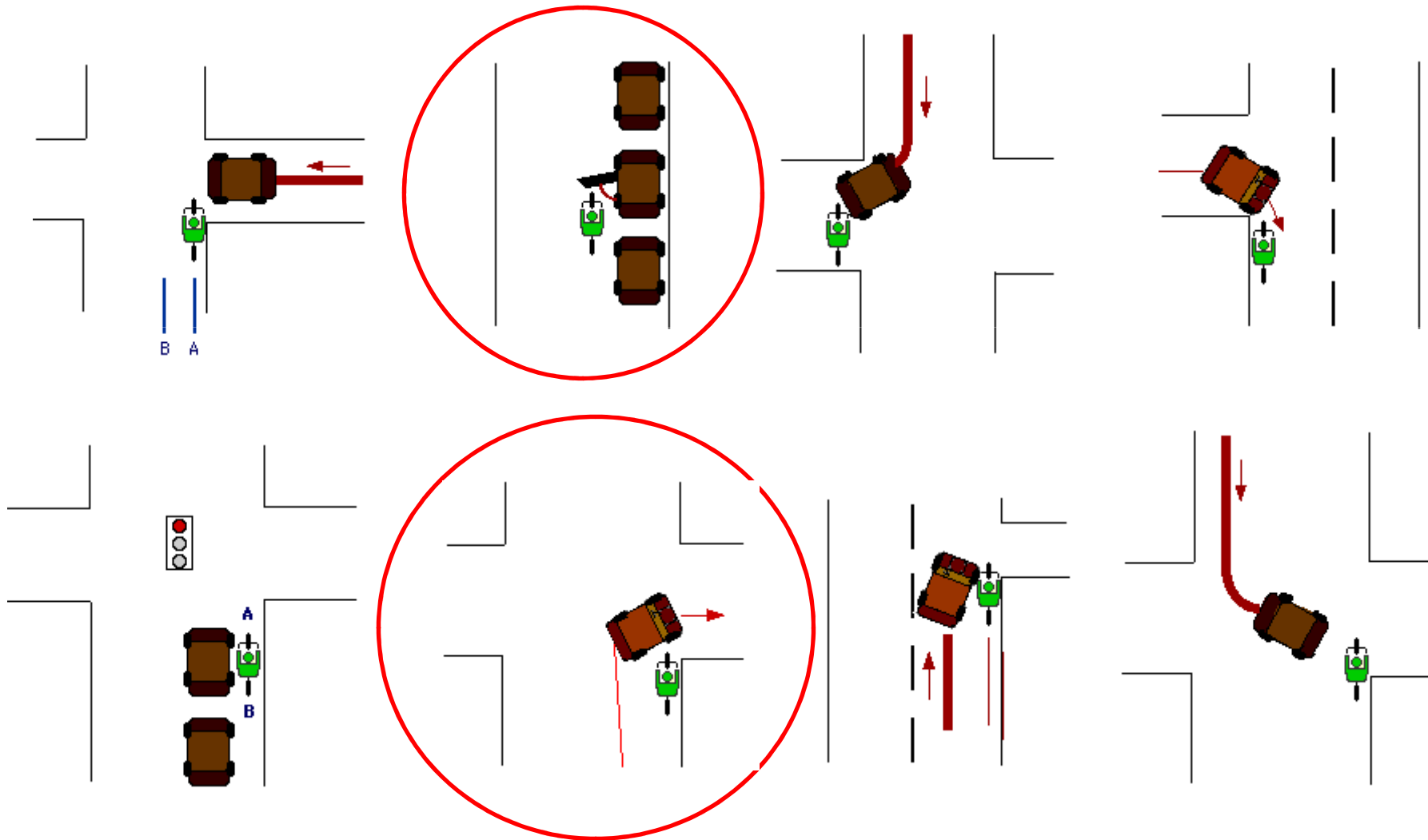


Don't
Thump
Your
Melon.

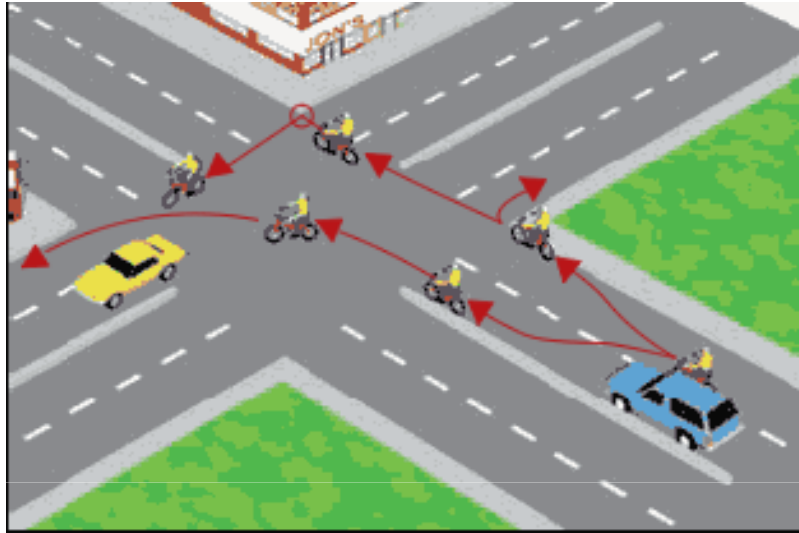
Defensive Riding



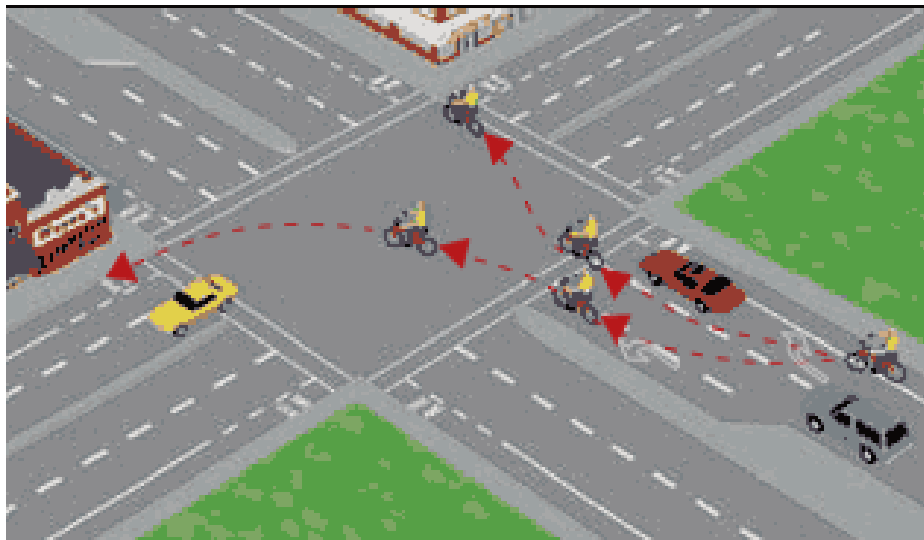
Safer Riding



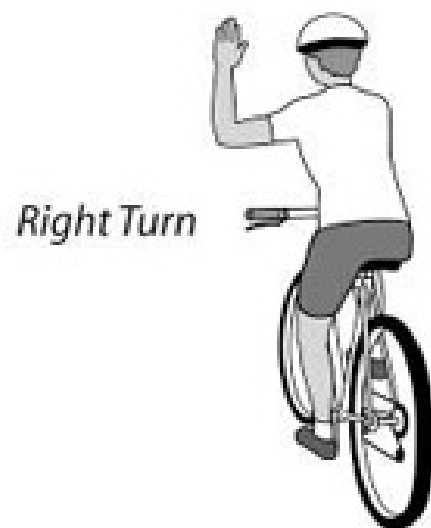
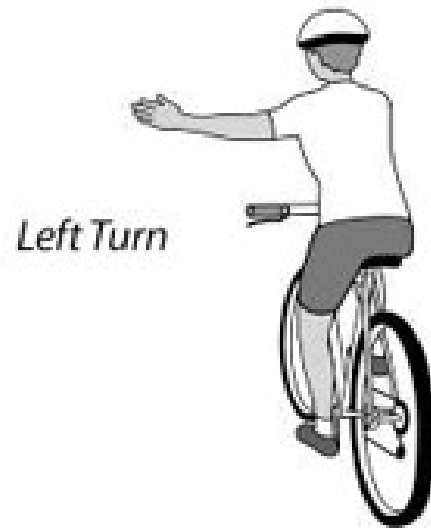
And the DMV says...



Street Legal Vehicle!
Front and Rear Lights
Cateye
Planet Bike
Reflectors



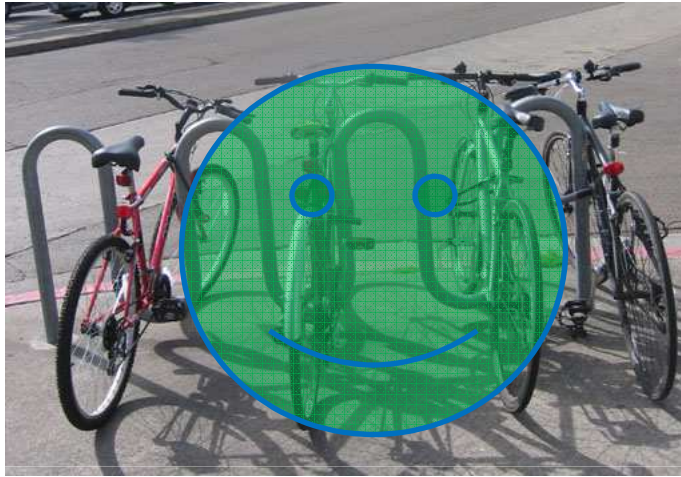
http://dmv.ca.gov/pubs/hdbk/shr_slow_veh.htm#bike



Theft Prevention

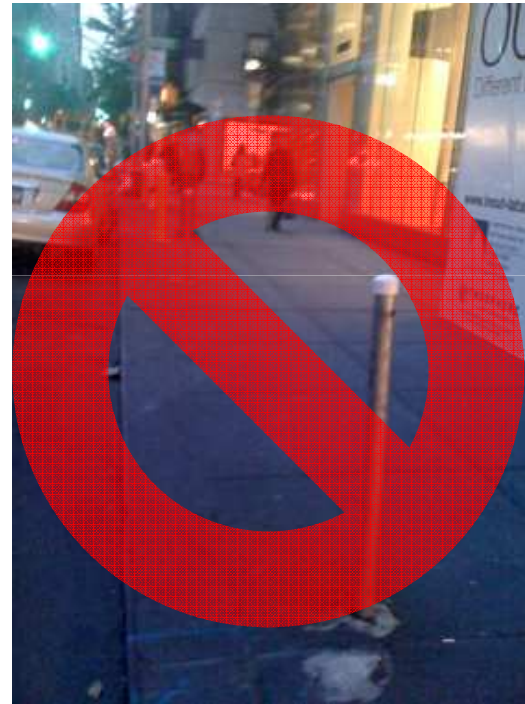


Some General Rules



- ALWAYS LOCK YOUR BIKE!

- Gone for 1 minute? Lock it.
- Park in visible spots with heavy pedestrian traffic.



What Do I Need?

THE U-LOCK



+

THE CABLE



- Having a cheap bike helps. Breaking the lock might cost more than the bike itself.

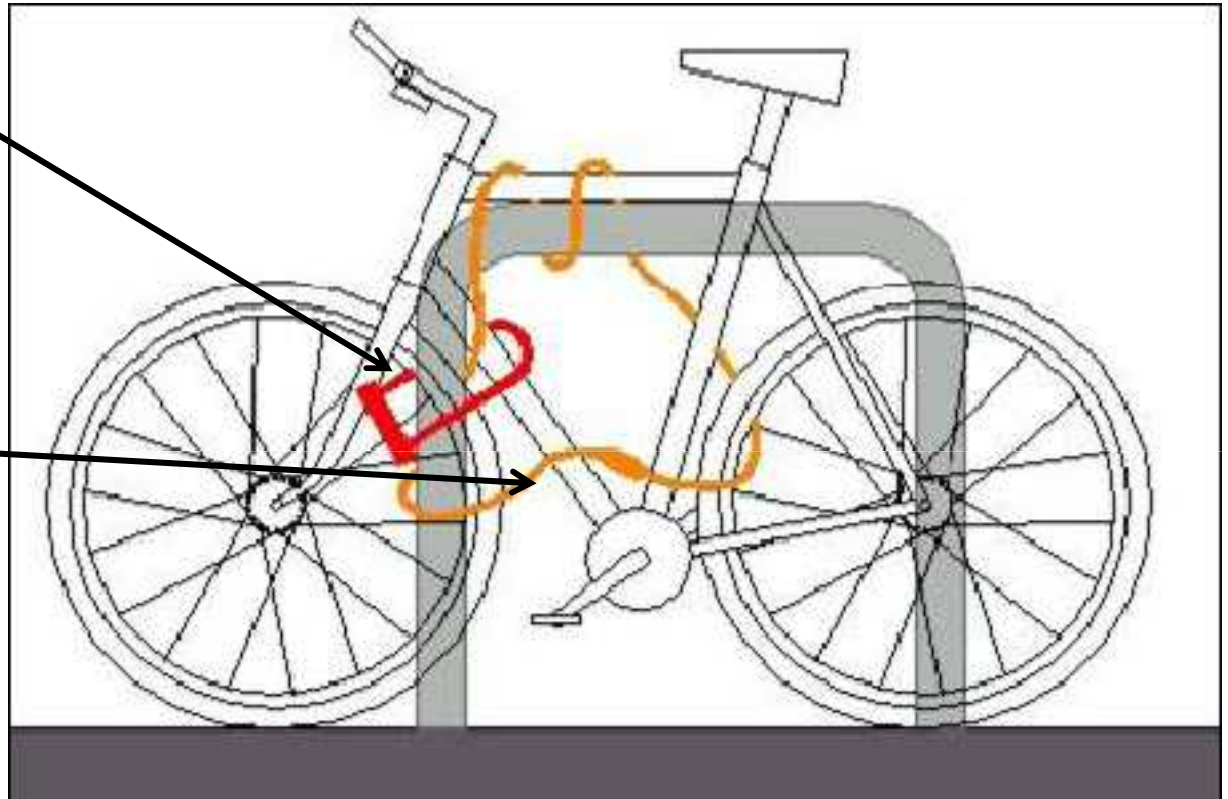
<http://bikedepot.com/product/kryptonite-new-york-fahgettaboudit-u-lock-43799-1.htm>

<http://bikedepot.com/product/kryptonite-kryptolok-series-2-std-with-4-foot-flex-cable-43810-1.htm>

The Proper Way

U-lock secures the frame and front wheel to the post.

Cable lock provides an additional lock to the frame and front wheel. Also can lock back wheel and seat post.



Sheldon Brown Method

The Bike Tree





Buying a Bike On Craigslist

Choosing a good bike from an ocean of crappy bikes:

- It's all about the fit
- Do your research -- is it worth it?
- If it's too good to be true, it probably is
- Objectively assess the condition of the bike
- Bring a knowledgeable friend

<http://sfbay.craigslist.org/eby/bik/2176112017.html>

<http://sfbay.craigslist.org/sfc/bik/2175995496.html>

<http://sfbay.craigslist.org/nby/bik/2176040697.html>

<http://sfbay.craigslist.org/eby/bik/2176011434.html>