

REPLACING PARTS AS YOU GO

USE THIS PAGE TO KEEP TRACK OF ANY REPLACEMENT PARTS YOU INSTALL. IT WILL HELP US PRICE THE BIKE, LET YOU SEE WHAT WORK YOU'VE ACCOMPLISHED, AND KEEP A RECORD OF FANCY ADDITIONS.

	USED	NEW	
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STAFF USE ONLY	FINAL CHECK OUT BY:
	DATE:
	PRICE RANGE RECOMMENDATION:

SUPER FUN BIKE REPAIR ZINE!



FOLLOW THESE STEPS TO FIX UP ANY BIKE, WHETHER IT'S A BIKE CO-OP DONATION OR YOUR OWN TRUSTY STEED!

BEFORE YOU GO ON, MAKE SURE THIS BIKE HAS A BLUE TAG ON ITS HANDLEBARS -- IF NOT, YOU SHOULD START WITH *ISSUE #1* OF THE *SUPER FUN BIKE REPAIR ZINE!*

IN THIS ISSUE, OUR HEROES START THEIR QUEST TO FIX THE BIKES!!!

1 START BY MATCHING THIS CHECKLIST TO A BIKE. WRITE THE BIKE'S I.D. # (STICKERED TO ITS FRONT) AND OTHER INFO BELOW:

BIKE I.D. # _____ COLOR _____
 MANUFACTURER _____ MODEL _____

2 NEXT, GO AHEAD AND GIVE THE BIKE ITS OWN SPECIAL NAME!

3 NOW DECIDE WHO'S WORKING ON THIS BIKE. CIRCLE ONE OPTION

- ANYONE!
HAVE AT IT
- JUST ME,
PLEASE

IF IT'S A "JUST YOU" PROJECT, WRITE YOUR CONTACT INFO BELOW, AND ADD A **WHITE TAG** WITH **YOUR NAME & THE DATE** TO THE HANDLEBARS.

NAME _____
 DATE _____
 PHONE _____

HELLO
this bike's name is

NOTE #1 -- IF YOU ABANDON THE BIKE FOR **FOUR WEEKS**, IT BECOMES AN ANYONE PROJECT!
NOTE #2 -- WHEN YOU'RE DONE WORKING FOR THE DAY, **RETURN THIS CHECKLIST** TO THE WELCOME DESK!

BIG TIPS FOR BIKE REPAIR

TIP: JUST ABOUT EVERY PROBLEM ON YOUR BIKE IS SOMETHING YOU CAN ACTUALLY FIX WITH YOUR OWN HANDS. HOW COOL IS THAT!

TIP: YOU CAN LEARN TO DO *ANYTHING YOU WANT TO DO*. IF YOU'RE STUCK, TRY ASKING A MECHANIC, CONSULTING OUR REPAIR GUIDES, LOOKING ON THE WEB, MAKING FRIENDS IN THE SHOP, OR TRYING THINGS OUT ON YOUR OWN. (THEN, YOU CAN COME VOLUNTEER TO TEACH OTHERS HOW TO DO IT ALL, TOO!)

TIP: ANY OF THESE PROJECTS CAN BE EITHER "DO-IT-YOURSELF" OR "DO-IT-TOGETHER." ASK FOR HELP WHENEVER YOU NEED IT -- AND ASK FOR *SPACE* WHEN YOU WANT TO WORK ON SOMETHING SOLO!

TIP: REMEMBER THAT IT'S OKAY IF YOU BREAK SOMETHING, EITHER ON YOUR BIKE OR ON A CO-OP BIKE. *REALLY!* WE'RE ALL LEARNING HERE, AND WE CAN ALWAYS REPLACE STUFF. *ENJOY THE FREEDOM TO FAIL!*

TIP: THERE'S ALMOST ALWAYS A *RIGHT TOOL FOR THE JOB*, AND ALWAYS GOOD REASONS TO USE IT -- SO ALWAYS TRY TO DO SO.

TIP: ALMOST *NOTHING* HERE GETS PUT TOGETHER *DRY* -- MOST BIKE PARTS NEED TO BE *GREASED* BEFORE THEY'RE SCREWED TOGETHER, INSERTED, OR PRESSED IN. INSTALLED. (YES, EVEN IF YOU JUST CLEANED THEM, RE-GREASE!) SOME PARTS NEED A STICKY KIND OF ADHESIVE CALLED "*LOCKTITE*," AND SOME NEED A DROP OF *LUBE*. BUT ALMOST NOTHING WILL GET PUT TOGETHER DRY.

VITAL STATS

BIKE NAME _____

BIKE I.D. # _____ COLOR _____

MAKER _____ MODEL _____

SEAT TUBE SIZE (C-C) _____

SEAT TUBE SIZE (C-T) _____

TOP TUBE SIZE (C-C) _____

GEARING _____

BRAKE TYPE _____

WHEEL SIZE _____

TIRE SIZE _____ PSI _____

SEATPOST DIAMETER _____

STEM TYPE + LENGTH _____

BOTTOM BRACKET TYPE _____

FANCY PARTS OR NOTES _____

BREAK IT TILL YA MAKE IT!

IT'S A BIKE CO-OP MOTTO!

MAKE THAT BIKE FIT YA!

SO! YOU GOT YOU A SHINY NEW BIKE OR, EVEN BETTER, UPCYCLED AND REFURBED YOUR RIDE AT THE COOP. YOU'RE ALMOST READY TO ROLL! SAME AS YOUR BIKE, YOUR BODY CONSISTS OF LOTS AND LOTS OF TINY PARTS. IF YOUR BIKE AND BODY AREN'T ALIGNED PRETTY WELL TO EACH OTHER THEN THOSE PARTS WILL ALL HURT. SO LET'S ADJUST JUST A FEW BITS (ON THE BIKE) TO BANISH SORE BACKS, ACHEY KNEES, AND STIFF WRISTS, AND TURN EXHAUSTION INTO FUN!

SADDLE HEIGHT: YOU WANT TO RAISE THE SADDLE AS FAR AS POSSIBLE SO THAT YOUR LEGS ARE JUST SLIGHTLY, SLIGHTLY BENT WHEN THE PEDAL IS AT THE BOTTOM OF ITS ROTATION (THE 5:30 TO 6 O' CLOCK POSITION). REMEMBER, THERE'S **NO WAY** TO RIDE COMFORTABLY **AND** BE FLAT-FOOTED ON THE GROUND AT A STOP LIGHT. NONE. SO PICK: DO YOU WANT TO ENJOY RIDING, OR ENJOY STOP LIGHTS? IT'S A TRICK QUESTION: PUT YOUR SADDLE AT THE RIGHT HEIGHT **TO RIDE**. YOU'LL GET USED TO IT, AND YOU CAN ASK FOR SOME RIDING TIPS TO GET THERE TOO.

SADDLE ANGLE: THE SADDLE SHOULD BE PRETTY LEVEL TO THE GROUND. SOME SADDLES HAVE A LEEEEETLE ANGLE. SIMPLE, RIGHT?

SADDLE FORE-AFT: AS A GENERAL RULE, SLIDE THE SADDLE FORWARD OR BACK ALONG ITS RAILS SO THAT YOUR KNEECAP IS RIGHT ABOVE THE CENTER OF THE PEDAL AT ITS FOREMOST (3 O' CLOCK) POSITION.

HANDLEBAR HEIGHT: THIS ONE IS MOSTLY ABOUT FEELING COMFORTABLE. START WITH THE HANDLEBAR AT THE SAME HEIGHT AS YOUR SADDLE AND GO FROM THERE. RAISING IT GIVES YOU A MORE UPRIGHT, LEISURELY POSITION; LOWERING WILL GIVE YOU MORE SPEED AND "OOMF."

BRAKE LEVER POSITION: YOUR WRISTS ALWAYS WANT TO BE STRAIGHT OR "UNBROKEN" TO BE COMFY. THINK OF HOW YOU HOLD, LIKE, ANYTHING -- A CAN OF SODA, A NINTENDO CONTROLLER, A HANDSHAKE. NOW, PRETEND TO HOLD AN IMAGINARY PISTOL* THAT NEEDS TWO FINGERS ON THE TRIGGER. KEEP YOUR HAND IN THAT POSITION, AND WITHOUT CHANGING HOW STRAIGHT YOUR WRIST IS, GET ON YOUR SADDLE AND GRAB YOUR HANDLEBARS. IN THE SPACE WHERE YOUR FINGERS ARE REACHING, **THAT'S** WHERE THE BRAKE LEVERS GO. IF YOU'VE GOT DROP BARS, YOU'LL MOVE THE BARS AND HOODS AROUND (HOODS USUALLY NEED TO ANGLE UP A SMIDGE) TO FIND THIS "UNBROKEN" WRIST POSITION. IF YOU'VE GOT FLAT BARS, YOU'LL ANGLE THE LEVERS (USUALLY DOWN) TO FIND THAT MOST ERGONOMIC SPOT.

* ONE OF THOSE BUBBLE GUNS. OR A POTATO GUN. A T-SHIRT CANNON. A GLUE GUN!

HOW TO USE THIS BOOKLET

EACH PAGE ZOOMS IN ON ONE OF YOUR BIKE'S DIFFERENT MECHANICAL SYSTEMS. GO THROUGH THE BOOKLET PAGE BY PAGE, CHECK OFF THE CHECKBOXES, AND SCOPE OUT THE SPECIAL TIPS. WHEN YOU'VE CHECKED EVERYTHING, MOVE TO THE NEXT PAGE. **EASY!**

- ⇒ SOME CHECKBOXES ARE **INSTRUCTIONS**, AS IN "TIGHTEN THIS THING," AND OTHERS ARE **QUESTIONS**, AS IN "IS THIS PART IN GOOD SHAPE?" YOU'LL NEED TO FOLLOW THE INSTRUCTIONS OR ADJUST / REPAIR / REPLACE THE PART IN QUESTION BEFORE YOU CAN CHECK THE BOX.
- ⇒ IF YOU DON'T KNOW HOW TO DO ONE OF THE CHECKBOXES AND / OR DON'T WANT TO TACKLE IT RIGHT NOW, **THAT'S FINE, TOO**. SKIP IT AND LEAVE THE BOX UNCHECKED, AND DO SOMETHING ELSE INSTEAD.
- ⇒ IF YOU'RE **REFURBISHING A BIKE CO-OP BIKE**, IT'S PROBABLY BEST TO GO THROUGH THESE PAGES IN ORDER, BUT IT'S NOT 100% NECESSARY. JUST CHECK OFF YOUR PROGRESS AS YOU GO SO THAT OTHER PEOPLE DON'T REPEAT YOUR WORK.
- ⇒ IF YOU'RE **WORKING ON YOUR OWN BIKE**, YOU MIGHT BE HAPPIER DOING **BRAKES, WHEELS, DRIVETRAIN, SHIFTING, AND BOTTOM BRACKET** IN THAT ORDER BEFORE TACKLING ANYTHING ELSE HERE. OH, BUT IF YOU'VE GOT A SPECIFIC PROBLEM, WELL, **START THERE!**

WHEN YOU FINISH **ALL** THE CHECKBOXES ON ANY PAGE, YOU'RE DONE WITH THAT STEP! CHECK IT OFF ON **THIS** PAGE, RIGHT HERE:

- | | |
|---|--|
| <input type="checkbox"/> 1. SEATPOST & SADDLE | <input type="checkbox"/> 5. DRIVETRAIN |
| <input type="checkbox"/> 2. STEM, BARS, HEADSET | <input type="checkbox"/> 6. SHIFTING |
| <input type="checkbox"/> 3. BOTTOM BRACKET | <input type="checkbox"/> 7. BRAKES |
| <input type="checkbox"/> 4. WHEELS | <input type="checkbox"/> 8. TEST RIDE |

ONE MORE THING: USE THE LAST PAGE TO TRACK ANY REPLACEMENT PARTS YOU USE, SO THAT WE CAN APPROPRIATELY PRICE THE FINISHED BIKE.

CREDITS: THE SUPER FUN BIKE REPAIR ZINE WAS WRITTEN AND DESIGNED BY **JOSH BISKER** OF THE **MECHANICAL GARDENS BIKE COOP** IN BROOKLYN, NY. THAT'S ME!

I OWE A HUGE DEBT OF GRATITUDE TO OUR GREAT ORGANIZERS AND VOLUNTEERS FOR HELPING ME DEVELOP THIS PROJECT -- AND TO THE AMAZING ATTENDEES OF THE ANNUAL **BIKE!BIKE!** CONFERENCE! THAT BAND OF SPARKLING, RADICAL ACTIVISTS AND EDUCATORS IS MY SOUL AND INSPIRATION ... I LOVE YOU ALL SO MUCH. (LEARN MORE AT BIKEBIKE.ORG.)

IF THIS ZINE INSPIRES **YOU**, PLEASE CONSIDER SUPPORTING THE MECHANICAL GARDENS WITH A DONATION AT BIKECOOP.NYC/DONATE, OR REACH OUT TO ME AT JBISKER@GMAIL.COM.

STEP 1: SEAT POST & SADDLE

CAN YOU MOVE THE SEATPOST?	<input type="checkbox"/> OK
CLEAN AND RE-GREASE THE SEATPOST	<input type="checkbox"/> OK
IS THE SADDLE IN GOOD SHAPE?	<input type="checkbox"/> OK
IS THE SADDLE HELD TIGHTLY ON THE POST?	<input type="checkbox"/> OK
IS THE SADDLE ALIGNED STRAIGHT?	<input type="checkbox"/> OK

EXTRA CREDIT: SEAT POSTS COME IN A MILLION DIFFERENT DIAMETERS. WHAT SIZE IS THIS ONE? ADD IT TO THE *VITAL STATS* SECTION ON PAGE 15.

STEP 2: STEM, BARS, HEADSET

IS THE STEM STRAIGHT, AND ARE ALL THE BOLTS TIGHT?	<input type="checkbox"/> OK
ARE THE BARS IN GOOD SHAPE, I.E. NOT BENT?	<input type="checkbox"/> OK
ARE THE GRIPS OR BAR TAPE IN GOOD SHAPE? I.E. THEY'RE NOT STICKY OR FALLING APART?	<input type="checkbox"/> OK
DO THE BARS HAVE BAR-END PLUGS INSTALLED?	<input type="checkbox"/> OK
IS THE HEADSET ADJUSTED WELL?	<input type="checkbox"/> OK

TIP: DOUBLE-CHECK WHETHER YOUR STEM BOLTS ARE TIGHT BY FACING THE BIKE, GRIPPING THE FRONT WHEEL BETWEEN YOUR KNEES, AND TRYING TO TURN THE BARS SIDE-TO-SIDE AND UP-AND-DOWN.

TIP: IF THIS BIKE HAPPENS TO NEED NEW GRIPS OR BAR TAPE, *WAIT!* DON'T REPLACE THEM YET! HOLD OFF UNTIL YOU FINISH WORKING ON EVERYTHING ELSE. OTHERWISE, WHILE YOU'RE FIXING THE REST OF THE BIKE, GREASE AND GRIME ARE GOING TO GET THEM ALL DIRTY -- BEFORE YOU CAN EVEN TAKE A RIDE!

GOLD STAR: A BUNCH OF OLDER BIKES HAVE CRAPPY STEEL DROP BARS AND TWO-PART "SUICIDE" LEVERS, SO CALLED BECAUSE THEY MIGHT NOT HAVE ENOUGH POWER TO REALLY STOP YOU.

BE THE CHANGE YOU WANT TO SEE! REMOVE THESE BARS & LEVERS ENTIRELY (YOU'LL HAVE TO CUT THE BRAKE CABLES) AND REPLACE THEM WITH MORE COMFORTABLE AND EFFECTIVE MODERN BARS & LEVERS. IT'S THE COOLEST.

* REMEMBER TO TRACK ANY PARTS YOU REPLACED ON THE BACK COVER

TIRE SIZE: FIGURING OUT YOUR TIRE SIZE IS *OBNOXIOUS*. TIRES HAVE AT LEAST *TWO WAYS* OF NOTING THEIR MEASUREMENTS. OFTEN YOU'LL FIND THEM WRITTEN SIDE-BY-SIDE ON THE TIRE ITSELF.

- ⇒ LOOK FOR A THREE DIGIT NUMBER BY A TWO DIGIT NUMBER, LIKE *622 X 25* OR *559 X 57*. THE THREE-DIGIT NUMBER IS THE "INTERNATIONAL STANDARD" OR *ISO* NUMBER. IT MEASURES THE DIAMETER OF THE INSIDE EDGE OF THE TIRE.
- ⇒ LOOK FOR ANOTHER SET OF NUMBERS, LIKE *700C X 25C* OR *26" X 2.125"* OR *24" X 1 1/8"*. IN THESE CASES, THE FIRST NUMBER IS, WELL, THE LOCAL SIZE. IT'S WHAT PEOPLE USE IN CONVERSATION: -- "700C" OR "26-INCH". IT ORIGINALLY WAS MEANT TO MEASURE THE OUTSIDE DIAMETER OF THE TIRE, BUT IT TURNS OUT THAT'S HARD TO STANDARDIZE. NOW IT'S KIND OF A MEANINGLESS NUMBER -- EXCEPT THAT WE *STILL* USE IT WHEN WE TALK ABOUT THE SIZES. "THIS IS A 26ER, THIS IS A 700C, THIS IS A 24-INCH TIRE, THIS IS A 29ER," ETC.
- ⇒ IN BOTH CASES, THE SMALLER NUMBER TELLS YOU HOW FAT / SKINNY THE TIRE IS.
- ⇒ BE CAREFUL ABOUT *INTERCHANGEABILITY*: IF ONE TIRE SIZE IS WRITTEN AS A *DECIMAL* AND THE OTHER AS A *FRACTION*, THEY WILL *NOT* BE INTERCHANGEABLE, EVEN IF IT LOOKS LIKE THEY SHOULD BE. FOR EXAMPLE, A *26 X 1.75* TIRE IS NOT INTERCHANGEABLE WITH A *26 X 1-3/4* TIRE, *EVEN THOUGH* THE NUMBERS LOOK LIKE THEY MEAN THE SAME THING. (YES, THIS DRIVES EVERYONE *CRAZY*.) HERE'S A HELPFUL HINT THOUGH -- YOU CAN TELL WHICH TIRES *WILL* BE INTERCHANGEABLE FROM THEIR *ISO NUMBERS*. IN THIS SAME EXAMPLE, A 26 X 1-3/4 TIRE HAS AN ISO# OF *571 MM*, WHILE A 26 X 1.75 TIRE IS *559 MM*. NOT INTERCHANGEABLE!

WHEEL SIZE: WHEELS ALMOST NEVER HAVE THE SIZE WRITTEN ON THEM ANYWHERE. HEAVEN KNOWS WHY. YOU'LL EITHER NEED TO LOOK ON THE TIRES (IF THEY'RE STILL ATTACHED) MATCH THE WHEEL UP TO ANOTHER ONE, OR USE A SIZING JIG AT YOUR BIKE CO-OP. WHEN YOU WRITE OUT THE WHEEL SIZE, IT'S USUALLY ENOUGH TO PUT A NUMBER THAT SAYS HOW BIG THE WHEEL IS, AND OMIT THE ONE THAT SAYS HOW FAT AROUND THE CHANNEL FOR THE TIRE IS. SO IF A TIRE SAYS *700C X 28C* YOU CAN WRITE THE *WHEEL SIZE* AS *700C / ISO 622*.

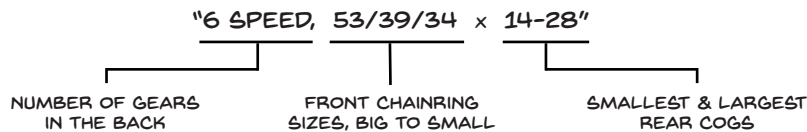
STEM SIZE: STEM ANGLES ARE HARD TO MEASURE UNLESS YOUR SHOP HAS A JIG, BUT LENGTH IS PRETTY STRAIGHTFORWARD: IT'S MEASURED IN 5MM INCREMENTS FROM THE CENTER OF THE TOP-CAP BOLT / STEM BOLT TO THE CENTER OF THE HANDLEBARS. YOU CAN ALSO MEASURE THE CLAMP SIZE (I.E. WHAT HANDLEBAR DIAMETER IT HOLDS, USUALLY *22.2, 25.4, 26.0, 26.4* OR *31.8MM*), AND THE DIAMETER OF THE QUILL STEM OR STEERER TUBE OPENING (*1" OR 1-1/8"*, SOMETIMES *1-1/4"*).

TIPS ON MEASURING SOME PARTS OF YOUR BIKE

FRAME SIZE: YOU NEED TO TAKE A FEW MEASUREMENTS TO SIZE YOUR BIKE. WRITE THINGS IN BOTH INCHES AND CM.

- **CENTER-TOP (C-T):** MEASURE THE *SEAT TUBE* FROM THE CENTER OF THE BOTTOM BRACKET TO THE TIPPY TOP OF THE SEAT TUBE. REMEMBER TO HOLD THE TAPE MEASURE NEXT TO THE FRAME AT THE BOTTOM BRACKET, NOT ON THE OUTSIDE OF THE CRANK ARM.
- **CENTER-CENTER (C-C):** AGAIN MEASURE THE SEAT TUBE, BUT THIS TIME FROM THE CENTER OF THE BOTTOM BRACKET TO THE CENTER OF THE TOP TUBE, AT THE PLACE WHERE THE TOP TUBE MEETS THE SEAT TUBE.
- **TOP TUBE:** MEASURE THE TOP TUBE FROM THE CENTER OF THE HEAD TUBE TO THE CENTER OF THE SEAT TUBE. IF YOUR TOP TUBE ISN'T MADE TO BE LEVEL, YOU MIGHT NEED TO USE A STICK OR LEVEL TO SEE WHERE IT *WOULD* HIT THE SEAT TUBE.
- **VITAL STATS:** ADD THIS INFO TO THE BACK PAGE OF THIS BOOKLET.

GEARING: IT'S EASY TO WRITE OUT YOUR GEARING. FIRST SEE HOW MANY GEARS (OR "COGS") YOU HAVE IN THE BACK AND FRONT. THEN SEE HOW MANY *TEETH* ARE ON EACH OF THE FRONT CHAINRINGS AND ON THE *SMALLEST AND LARGEST* OF YOUR *REAR COGS*. (SOMETIMES THOSE NUMBERS ARE STAMPED INTO THE METAL, OTHER TIMES YOU HAVE TO JUST COUNT.) THEN WRITE IT OUT LIKE THIS:



CHAIN SIZE: THE NUMBER OF REAR GEARS TELLS YOU WHAT CHAIN YOU NEED. CHAINS COME IN DIFFERENT *THICKNESSES* FOR DIFFERENT GEARINGS -- THE MEASUREMENT IS ABOUT HOW THICK THE PINS AND ROLLERS ARE. SOME SINGLE-SPEED, FIXED-GEAR, AND BMX BIKES TAKE BEEFY *1/8" CHAINS*. OTHERS TAKE *3/32" CHAINS*, AS DO ALL 3- 4- 5- 6- 7- AND 8-SPEEDS. (REMEMBER, WE'RE ONLY COUNTING THE NUMBER OF *REAR GEARS*.) 9- 10- 11- AND 12-SPEEDS EACH TAKE UNIQUE SIZES THAT GET PROGRESSIVELY THINNER. IN A PINCH, YOU CAN USE A TOO-THIN CHAIN ON YOUR BIKE, BUT NOT A TOO-THICK ONE -- SO A 9-SP CHAIN WILL WORK ON AN 8-SP DRIVETRAIN, BUT NOT THE OTHER WAY AROUND.

ABOUT STEMS: THERE'S TWO BASIC KINDS OF STEMS: "THREADED" STEMS (A.K.A. "QUILL" STEMS) LOOK LIKE THE NUMBER 7. "THREADLESS" STEMS LOOK LIKE DOG BONES. THEY CORRESPOND TO TWO KINDS OF *HEADSETS*: "THREADED" HEADSETS THAT SCREW ONTO THE TOP OF YOUR FORK, AND "THREADLESS" HEADSETS THAT JUST SLIDE ONTO IT. THESE CORRESPOND, YOU GUESSED IT, TO "THREADED" FORKS THAT HAVE SCREW THREADS CUT INTO THEIR TOPS, AND "THREADLESS" FORKS THAT ARE SMOOTH. THERE ARE LOTS OF DIFFERENT STEM LENGTHS, ANGLES, AND EVEN CLAMP DIAMETERS TO HOLD FATTER OR SKINNIER HANDLEBARS BUT THE TWO BASIC CATEGORIES ARE "THREADED" AND "THREADLESS."

EXTRA CREDIT: ADD THIS BIKE'S STEM TYPE TO THE *VITAL STATS* ON THE BACK OF THIS BOOKLET. CHECK OUT **PAGE 13** TO SEE OTHER MEASURING TIPS, LIKE THE STEM'S LENGTH, CLAMP SIZE IS (I.E. WHICH HANDLEBARS IT CAN HOLD), AND THE DIAMETER STEERER THAT IT'S MADE FOR.

STEP 3: BOTTOM BRACKET

IS THE BOTTOM BRACKET WORKING WELL?

IS IT SPINNING SMOOTH AS BUTTER?	<input type="checkbox"/> OK
NO RATTLING, EITHER SIDE-TO-SIDE OR UP-AND-DOWN?	<input type="checkbox"/> OK
NOT MAKING ANY WEIRD SOUNDS?	<input type="checkbox"/> OK

IF YOUR BOTTOM BRACKET ISN'T SPINNING SMOOTHLY -- OR IF IT *RATTLES*, *CLICKS*, OR MAKES *WEIRD SOUNDS* -- YOU'LL EITHER NEED TO ADJUST OR REPLACE IT BEFORE YOU CAN TICK OK. SERVICING BOTTOM BRACKETS IS FUN TO DO, AND IT CAN REALLY MAKE AN OLD BIKE RIDE LIKE BRAND NEW!

TIP: THERE'S A MILLION DANG KINDS OF BOTTOM BRACKETS OUT THERE, AND EVERY DANG ONE WORKS DIFFERENTLY AND NEEDS A DIFFERENT DANG TOOL. EVEN PRO MECHANICS MIX THEM ALL UP, ALL THE TIME. OH WELL, WHATCHA GONNA DO!?! FIRST IDENTIFY YOUR BB CORRECTLY AND THEN SEE WHAT IT NEEDS TO BE SERVICED.

EXTRA CREDIT: WHAT KIND OF BOTTOM BRACKET IS IT? WHAT ARE ITS MEASUREMENTS (IF IT HAS THOSE)? ADD THEM TO THE *VITAL STATS* ON **PAGE 15**.

MORE BIG TIPS FOR BIKE REPAIR

TIP: EVERYONE LEARNS IN DIFFERENT WAYS AND HAS DIFFERENT KINDS OF BRAINS. FIND WHAT YOUR HAPPIEST LEARNING STYLE IS HERE AT THE BIKE COOP. MAYBE YOU LIKE BEING IN CLASSES, OR LOOKING AT BOOKS, OR ASKING FOR DEMONSTRATIONS, OR JUST FIDDLING WITH THINGS SOLO TO TEACH YOURSELF. WHATEVER WORKS FOR YOU, **WORKS!** THE OTHER SIDE OF THIS IS THAT EACH OF THE VOLUNTEERS HERE ALSO HAS A DIFFERENT WAY OF **SHARING** INFORMATION. SO DON'T BE SHY ABOUT TELLING YOUR VOLUNTEERS WHAT YOUR PARTICULAR NEEDS ARE -- OR IF THEIR APPROACH IS **NOT** HELPING YOU IN THE WAY YOU NEED. WHEN YOU CAN ARTICULATE WHAT YOU NEED TO THRIVE, YOU'LL BE **TEACHING OTHERS** HOW TO **TEACH YOU**, AND THAT'S A HUGE PUBLIC SERVICE!

TIP: REMEMBER TO **TEST RIDE!**

TIP: DON'T BE SHY ABOUT ASKING OTHER PEOPLE TO LOOK OVER OR SAFETY-CHECK YOUR WORK. IT'S ALSO OKAY TO ASK MORE THAN ONE VOLUNTEER FOR THEIR OPINION ABOUT WHAT YOU'RE DOING.

TIP: WHEN SOMETHING IS WRONG WITH YOUR BIKE, THE ANSWER IS **ALMOST ALWAYS** "TAKE IT APART, CLEAN IT, AND PUT IT BACK TOGETHER AGAIN." THIS SOLVES LIKE, 85% OF ALL BIKE PROBLEMS. **SERIOUSLY.**

DOING THIS ALSO TEACHES YOU HOW TO ADDRESS MOST OF THE OTHER 15% OF PROBLEMS THAT REMAIN, INCLUDING HOW TO INSTALL REPLACEMENT PARTS. IN OTHER WORDS, IT IS **ALWAYS** A PRODUCTIVE THING TO DO! IF YOU'RE STUCK FOR HOW TO FIX SOMETHING, OR IF YOU'RE JUST LOOKING FOR A WAY TO PASS TIME AND HONE YOUR SKILLS, TRY TAKING IT APART, CLEANING IT, AND PUTTING IT BACK TOGETHER AGAIN. (IT'S OUR BIKE-PEOPLE VERSION OF THE "TURN IT OFF AND ON AGAIN" TRICK THAT YOU DO WITH COMPUTERS.) HALF OF GOOD BIKE MAINTENANCE IS JUST DOING THIS REGULARLY -- IF YOU DO IT, YOUR BIKE WILL PRETTY MUCH RUN LIKE A DREAM FOREVER!

TIP: SOMETIMES WE **ALL** GET FRUSTRATED OR FEEL DUMB. MAYBE WE CAN'T FIGURE OUT WHAT TO DO, DON'T KNOW WHY SOMETHING ISN'T WORKING RIGHT, OR CAN'T UNDERSTAND WHAT WE'RE LOOKING AT EVEN AFTER SEEING IT FOR LIKE THE 1,000TH @#%\$ TIME. IT'S OKAY! WE'RE **ALL** LIKE THAT, HONEST, SO BE KIND TO YOURSELF WHEN THIS HAPPENS. IT'S JUST PART OF THE PROCESS!

STEP 8. TEST RIDE & CHECK-OUT

BRAKES ARE STRONG AND THE "LEVER FEEL" IS EVEN	<input type="checkbox"/> OK
BRAKES DON'T RUB ON WHEELS OR TIRES	<input type="checkbox"/> OK
SHIFTING WORKS FOR ALL GEARS	<input type="checkbox"/> OK
TIRES ARE INFLATED TO RECOMMENDED PSI	<input type="checkbox"/> OK
NOTHING RATTLES OR RUBS	<input type="checkbox"/> OK
NO FUNNY NOISES	<input type="checkbox"/> OK
GIVE ALL BOLTS AND NUTS A FINAL TIGHTEN	<input type="checkbox"/> OK
GET A FINAL INSPECTION FROM A CO-OP MECHANIC	<input type="checkbox"/> OK
STICK ON A COOL BIKE CO-OP STICKER	<input type="checkbox"/> OK
TAKE A PHOTO WITH THE BIKE YOU BUILT, AND TAG US WHEN YOU POST IT ON SOCIAL MEDIA!	<input type="checkbox"/> OK



HOT DAMN! YOU JUST TRANSFORMED A HUNK OF JUNK THAT WAS MAYBE HEADED FOR THE LANDFILL INTO A BEAUTIFUL BIKE THAT'S **READY TO RIDE!**

NEXT: LET SOMEONE AT THE WELCOME DESK KNOW YOU'RE DONE. THEY'LL TAKE A PHOTO FOR POSTERITY (IF THAT'S COOL WITH YOU) AND REPLACE THE BLUE "FIX ME" TAG WITH AN ORANGE "PRICE ME" TAG. THIS BOOKLET WILL STAY WITH THE BIKE, SO THAT ITS NEW OWNER LEARNS ABOUT ALL YOUR HARD WORK AND GETS A RECORD OF THE BIKE'S VITAL STATS. IF IT'S **YOUR BIKE** AND NOT A **COOP BIKE**, CHECK OUT **PAGE 14** FOR TIPS TO HELP MAKE IT FIT YOUR BODY BETTER -- AND THEN RIDE IT AWAY INTO GLORY!

GOLD STAR: ADD ANY MISSING VITAL STATS TO THE BACK PAGE USING THE GUIDES YOU'LL FIND ON PAGES 12-13. AND THEN GIVE THIS PUPPY A GOOD CLEANING WITH SOME LIGHTLY SOAPY WATER AND A RAG OR BRUSH, AND HIT IT WITH SOME SILICONE POLISH. MAKE IT SPARKLE!

STEP 7: BRAKES

	FRONT	REAR
BRAKES ARMS ARE SPRINGY, CENTERED, & DON'T SQUEAK	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE CALIPER DOESN'T RATTLE AROUND ON FRAME	<input type="checkbox"/> OK	<input type="checkbox"/> OK
ADD A DROP OF LUBE TO EACH SPRING AND PIVOT POINT	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE LEVERS ARE IN GOOD SHAPE	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE LEVERS ARE TIGHT ON HANDLEBARS, LEVEL WITH EACH OTHER, AND ARE AT A GOOD ANGLE	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE PADS ARE IN GOOD SHAPE	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE PADS ARE ADJUSTED WELL & ALIGNED WELL	<input type="checkbox"/> OK	<input type="checkbox"/> OK
LEFT & RIGHT PADS CONTACT RIM AT THE SAME TIME	<input type="checkbox"/> OK	<input type="checkbox"/> OK
CABLES, HOUSING, FERRULES ARE IN GOOD SHAPE	<input type="checkbox"/> OK	<input type="checkbox"/> OK
CABLE ROUTING IS CORRECT, AND THE RIGHT LENGTH	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BARREL ADJUSTERS MOVE OK AND ARE NOT MAXED OUT	<input type="checkbox"/> OK	<input type="checkbox"/> OK
BRAKE CALIPER QUICK RELEASE (IF IT'S THERE) IS CLOSED	<input type="checkbox"/> OK	<input type="checkbox"/> OK

EXTRA CREDIT: WHAT KIND OF BRAKES DOES THIS BIKE HAVE? CIRCLE IT:

SIDE-PULL BRAKES • CENTER-PULL BRAKES • CANTILEVER BRAKES

LINEAR-PULL OR "V" BRAKES • DISC BRAKES • COASTER BRAKES

TIP: "SIDE-PULL" AND "CENTER-PULL" BRAKES ARE SOMETIMES CALLED "CALIPER" BRAKES -- BUT THIS IS CONFUSING, BECAUSE EVERY BRAKE HAS A PART THAT'S CALLED A CALIPER. IT'S THE PIECE THAT SQUEEZES THE PAD.

TIP: IF YOU INSTALL A **BRAND NEW** BRAKE CABLE, OR EVEN NEW CABLE HOUSING AND FERRULES, YOU'LL WILL NEED TO, AHEM, **BREAK IT IN** BEFORE IT WORKS RIGHT. REALLY THOUGH! TO DO THIS, INSTALL EVERYTHING, THEN SQUEEZE THE HOLY HECK OUT OF THE BRAKE LEVER, THEN RE-ADJUST THE CABLE TENSION AGAIN.

* REMEMBER TO TRACK ANY PARTS YOU REPLACED ON THE BACK COVER

STEP 4: WHEELS & TIRES

	FRONT	REAR
CHECK THE RIMS FOR CRACKS & BURRS	<input type="checkbox"/> OK	<input type="checkbox"/> OK
CHECK FOR MISSING OR BROKEN SPOKES	<input type="checkbox"/> OK	<input type="checkbox"/> OK
ARE THE BRAKE TRACKS OK?	<input type="checkbox"/> OK	<input type="checkbox"/> OK
LUBE THE SPOKE NIPPLES (LIKE 1 DROP!)	<input type="checkbox"/> OK	<input type="checkbox"/> OK
TRUE DAT: ARE THE SPOKES TIGHT & WHEELS TRUE?	<input type="checkbox"/> OK	<input type="checkbox"/> OK
ARE THE WHEELS HELD TIGHTLY IN THE FRAME?	<input type="checkbox"/> OK	<input type="checkbox"/> OK
DO THE HUBS TURN WELL (SMOOTHLY AND WITH NO PLAY)?	<input type="checkbox"/> OK	<input type="checkbox"/> OK
DO THE TUBES HOLD PRESSURE?	<input type="checkbox"/> OK	<input type="checkbox"/> OK
ARE THE TIRES IN GOOD CONDITION?	<input type="checkbox"/> OK	<input type="checkbox"/> OK

TIP: SOME PEOPLE LIKE TO DO EVERY CHECK FOR THEIR FRONT WHEEL, THEN MOVE TO THE BACK. OTHER FOLKS LIKE TO DO EACH CHECK FOR BOTH THE FRONT **AND** BACK BEFORE MOVING TO THE NEXT CHECK. AND SOME FOLKS LIKE TO GET A PARTNER AND WORK TOGETHER ON THE FRONT AND BACK WHEELS AT THE SAME TIME.

TIP: MOST TIRES HAVE IMPORTANT INFORMATION WRITTEN IN NEARLY INVISIBLE LETTERS SOMEWHERE ON THEIR SIDES -- SPECIFICALLY THEIR SIZES AND RECOMMENDED INFLATION PRESSURES.

VITAL STATS: ANSWER THESE QUESTIONS IN THE **VITAL STATS** SECTION ON PAGE 15. THIS BOOKLET: (1) WHAT SIZE ARE YOUR WHEELS? (2) WHAT SIZE ARE YOUR TIRES? (3) WHAT'S THE RECOMMENDED TIRE PRESSURE IN PSI? SEE **PAGE 13** FOR A GUIDE ON FINDING YOUR SIZES.

EXTRA EXTRA CREDIT: THESE METAL HOOPS AND RUBBER BANDS CAN BE SOME OF THE FANCIEST AND MOST EXPENSIVE PARTS ON A BIKE. WHAT BRAND AND MODEL OF WHEELS AND TIRES ARE THESE? THINK ABOUT ADDING IT TO THE VITAL STATS NOTES ON **PAGE 15**.

WHEELS: _____

TIRES: _____

* REMEMBER TO TRACK ANY PARTS YOU REPLACED ON THE BACK COVER

STEP 5: DRIVETRAIN

FRONT CHAIN RINGS IN GOOD SHAPE -- NOT TOO SHARK-FINNED, BENT, OR DIRTY?	<input type="checkbox"/> OK
SPIDER AND CRANKS IN GOOD SHAPE -- NOT BENT OR CRACKED, AND ALL CHAINRING BOLTS ARE PRESENT AND TIGHT?	<input type="checkbox"/> OK
REAR COGS IN GOOD SHAPE -- TEETH NOT TOO SHARK-FINNED OR DIRTY?	<input type="checkbox"/> OK
REAR COGS SPIN SMOOTHLY AND RATCHET WELL, DON'T WOBBLE TOO MUCH AROUND THE AXLE?	<input type="checkbox"/> OK
CRANKS DON'T WOBBLE, AND AREN'T BENT?	<input type="checkbox"/> OK
PEDALS ARE TIGHT, SPIN SMOOTHLY, AND AREN'T WOBBLY?	<input type="checkbox"/> OK
CHAIN IS IN GOOD SHAPE -- NOT STRETCHED OUT?	<input type="checkbox"/> OK
CHAIN IS THE RIGHT LENGTH?	<input type="checkbox"/> OK
CHAIN IS LUBED AND VERY CLEANLY WIPED DOWN?	<input type="checkbox"/> OK
IF SINGLE SPEED OR FIXED: CHAIN LINE IS GOOD?	<input type="checkbox"/> OK
IF SINGLE SPEED OR FIXED: CHAIN TENSION IS GOOD?	<input type="checkbox"/> OK

TIP: REMEMBER, EVERY PART OF YOUR DRIVETRAIN IS REPLACEABLE. BUT SOMETIMES, IF PARTS ARE SUPER WORN OUT, REPLACING ONE THING MEANS YOU NEED TO REPLACE OTHER THINGS WITH IT.

GOLD STAR: TAKE THE PEDALS OFF, GREASE THE THREADS, AND PUT 'EM BACK ON. **PLEASE!** A FUTURE MECHANIC (MAYBE YOU!) WILL **THANK YOU**.

EXTRA CREDIT: SOME BIKES HAVE "PIE PLATES" BEHIND THE GEARS, WHICH SOME FOLKS FIND DÉCLASSÉ. AS LONG AS THE LIMIT SCREWS ON YOUR REAR DERAILLEUR WORK OK, FEEL FREE TO REMOVE YOUR PIE PLATE.

VITAL STATS: HOW MANY GEARS DOES THIS BIKE HAVE? THERE'S A RIGHT WAY TO COUNT AND NOTATE THEM, AND DOING SO ALSO LETS YOU KNOW WHAT SIZE CHAIN THE BIKE NEEDS. HEAD TO **PAGE 12** TO LEARN HOW, AND THEN ADD THE INFO TO THE **VITAL STATS** OSECTION ON **PAGE 15**.

FIXED-GEAR TIP: WHEN WORKING ON THE CHAIN OF A FIXED-GEAR BIKE, **ALWAYS** KEEP A HAND ON THE **REAR WHEEL**. USE IT LIKE A STEERING WHEEL TO MOVE THE CHAIN AROUND. **NEVER** PULL ON THE CHAIN ITSELF TO CHANGE ITS POSITION, AND **NEVER** USE THE PEDALS TO MOVE IT EITHER -- USE THE REAR WHEEL, AND KEEP A HAND ON IT!

* REMEMBER TO TRACK ANY PARTS YOU REPLACED ON THE BACK COVER

STEP 6: SHIFTING

FRONT SHIFTING

SHIFTER MOVES WELL	<input type="checkbox"/> OK
CABLE, HOUSING, AND FERRULES ARE IN GOOD SHAPE	<input type="checkbox"/> OK
CABLE ROUTING IS CORRECT, AND THE RIGHT LENGTH	<input type="checkbox"/> OK
DERAILLEUR IS ALIGNED WELL AND NOT BENT	<input type="checkbox"/> OK
SPRING AND PIVOT POINTS ARE CLEANED AND LUBRICATED	<input type="checkbox"/> OK
LIMIT SCREWS ARE ADJUSTED PROPERLY	<input type="checkbox"/> OK
CABLE TENSION IS ADJUSTED PROPERLY	<input type="checkbox"/> OK

REAR SHIFTING

SHIFTER MOVES WELL	<input type="checkbox"/> OK
CABLE, HOUSING, AND FERRULES ARE IN GOOD SHAPE	<input type="checkbox"/> OK
CABLE ROUTING IS CORRECT, AND THE RIGHT LENGTH	<input type="checkbox"/> OK
DERAILLEUR + DERAILLEUR HANGER ARE WELL-ALIGNED & NOT BENT	<input type="checkbox"/> OK
SPRING, PIVOT POINTS, JOCKEY WHEELS ARE CLEANED AND LUBRICATED, AND JOCKEY WHEEL TEETH ARE NOT WORN OUT	<input type="checkbox"/> OK
LIMIT SCREWS ARE ADJUSTED PROPERLY	<input type="checkbox"/> OK
CABLE TENSION IS ADJUSTED PROPERLY	<input type="checkbox"/> OK

TIP: EVERYONE IS SCARED TO MONKEY AROUND WITH THEIR SHIFTERS AND DERAILLEURS, BUT THEY'RE ULTIMATELY VERY STRAIGHTFORWARD LITTLE MACHINES -- SO DON'T BE NERVOUS, WE GOT THIS!

EXTRA CREDIT: DOES THIS BIKE HAVE **INDEXED** OR **FRICTION** SHIFTING? WHAT KIND OF SHIFTERS DOES IT HAVE (OFTEN THIS MEANS, "WHERE DO THE SHIFTERS LIVE ON THE BIKE?") CIRCLE THE RIGHT ONES FOR THIS BIKE BELOW, AND ADD THE INFO TO THE **VITAL STATS** SECTION ON **PAGE 15**.

SHIFTING TYPE: INDEXED • FRICTION

SHIFTER TYPE: DOWNTUBE • GRIP • STEM • THUMB • TRIGGER • INTEGRATED (A.K.A. BRIFTER)

* REMEMBER TO TRACK ANY PARTS YOU REPLACED ON THE BACK COVER