

Boy Scout Cycling Merit Badge[©] 2007

Requirements

1. Show that you know first aid for injuries or illnesses that could occur while cycling, including hypothermia, heat reactions, frostbite, dehydration, insect stings, tick bites, snakebites, blisters, and hyperventilation.
2. Clean and adjust a bicycle. Prepare it for inspection using a bicycle safety checklist. Be sure the bicycle meets local laws.
3. Show your bicycle to your counselor for inspection. Point out the adjustments or repairs you have made. Do the following:
 - a. Show all points that need oiling regularly.
 - b. Show points that should be checked regularly to make sure the bicycle is safe to ride.
 - c. Show how to adjust brakes, seat level and height, and steering tube.
4. Describe how to brake safely with foot brakes and with hand brakes.
5. Show how to repair a flat. Use an old bicycle tire.
6. Take a road test with your counselor and demonstrate the following:
 - a. Properly mount, pedal, and brake, including emergency stops.
 - b. On an urban street with light traffic, properly execute a left turn from the center of the street; also demonstrate an alternate left-turn technique used during periods of heavy traffic.
 - c. Properly execute a right turn.
 - d. Demonstrate appropriate actions at a right-turn-only lane when you are continuing straight.
 - e. Show proper curbside and road-edge riding. Show how to ride safely along a row of parked cars.
 - f. Cross railroad tracks properly.
7. Describe your state's traffic laws for bicycles. Compare them with motor-vehicle laws. Know the bicycle safety guidelines.
8. Avoiding main highways, take two rides of 10 miles each, two rides of 15 miles each, and two rides of 25 miles each. You must make a report of the rides taken. List dates, routes traveled, and interesting things seen.*
9. After fulfilling requirement 8, lay out on a road map a 50-mile trip. Stay away from main highways. Using your map, make this ride in eight hours.

*The bicycle must have all required safety features. It must be registered as required by your local traffic laws.

Bicycle Safety Checklist

Use this list, or another provided by your counselor, to be sure your bike is ready for inspection—and the road or trail.

- ☐ **Frame (1)**—Clean and not bent out of shape. No cracks at frame joints (2).
- ☐ **Front fork (3)**—Clean and not bent out of shape. No cracks at fork joints (4).
- ☐ **Headset bearing (5)**—Well lubricated; turns freely with no binding. No perceptible play in the assembly.
- ☐ **Bottom-bracket bearing (6)**—Turns freely with no more than barely perceptible play in the bearing.
- ☐ **Crankarms (7)**—Clean and not bent out of shape. Tightened securely on the crankset axle (8).
- ☐ **Chainrings (9)**—Clean, not worn, and not bent out of shape. Chainring bolts (10) tightened securely to hold chainrings to crankarms.
- ☐ **Pedals (11)**—Bearings well-lubricated; turn freely with no perceptible play in the bearing. Pedals tightly screwed into crankarm. Toe clips (12) or clipless pedals functional.
- ☐ **Wheels (13)**—Run true and round. Wheel nuts tight. Closed and tight quick-releases (14). Centered in fork or frame members.
- ☐ **Wheel bearings (15) in hubs**—Well lubricated and properly adjusted to move freely with no more than barely perceptible play.
- ☐ **Spokes (16)**—None broken or bent. Tightened to a uniform tension.
- ☐ **Tires**—Good tread (17). Valves (18) completely airtight. Properly inflated to recommended pressure.
- ☐ **Rims (19)**—Clean of all oil and grime. Free of dents or kinks.
- ☐ **Chain (20)**—Proper tension, allowing $\frac{1}{2}$ inch of play. No stiff links. Clean, lubricated, and wiped of excess lubrication.
- ☐ **Gearing (21)**—Clean and oiled. Three-speed gears adjusted to eliminate all slipping. Front (22a) and rear (22b) derailleurs adjusted for proper shifting with shifters (22c).
- ☐ **Brakes (23)**
 - **Coaster:** even braking. Operate within a 20-degree back-pedaling motion.
 - **Hand:** even braking. All nuts tight. Front and rear brakes work without binding. Minimum of $\frac{3}{16}$ inch of rubber on brake pads (24). Brake pads aligned with rims and contact rims with a minimum movement of hand controls (25). No squeal when brakes are used.
- ☐ **Cables (26)**—No frayed ends. No broken strands. All taut.
- ☐ **Handlebars (27)**—Tightened securely. Grips (28) not worn; fit snugly. Adjusted to comfort of rider. Ends (29) plugged. In line with wheel.
- ☐ **Saddle (30)**—Height, tilt, and fore/aft position adjusted to rider. All adjustments securely tightened. Seatpost (31) not extended beyond maximum mark on post.
- ☐ **Rear red reflectors/lights (32)**—Visible for 300 feet. Lights/blinders functional with generator or batteries.
- ☐ **Bike registration**—If required by local law, must be displayed on frame.
- ☐ **Lights (optional)**—Front light visible for 500 feet. Generator or battery in good operating condition.
- ☐ **Bell or horn (optional)**—In good operating condition. All accessories well-tightened and securely fastened. No broken frames or fasteners.

[illegible]

Mountain bike

This image shows a mountain bike with various parts labeled with numbers in parentheses. The labels are as follows:

- (1) Frame
- (2) Down tube
- (3) Front wheel
- (4) Front fork
- (5) Headset
- (6) Pedal
- (7) Crank arm
- (8) Chainring
- (9) Chain
- (10) Rear wheel
- (11) Rear axle
- (12) Rear fender
- (13) Front fender
- (14) Tire
- (15) Tire
- (16) Rear shock absorber
- (17) Rear wheel
- (18) Front wheel
- (19) Tire
- (20) Rear wheel
- (21) Rear wheel
- (22a) Chainring
- (22b) Chainring
- (22c) Chainring
- (23) Rear wheel
- (24) Rear wheel
- (25) Handlebar
- (26) Down tube
- (27) Seat
- (28) Seat post
- (29) Handlebar
- (30) Seat
- (31) Rear wheel
- (32) Tire