



# Cycling

## Merit Badge Workbook

This workbook is not required but is designed to help you with this merit badge. No one can add or subtract from the Boy Scout Requirements #33215. Use page backs & add pages as needed. Please send comments to: [craig@craiglincoln.com](mailto:craig@craiglincoln.com). Requirements revised: 2005, Workbook updated: January 2005.

Scout's Name: \_\_\_\_\_ Unit: \_\_\_\_\_

Counselor's Name: \_\_\_\_\_ Counselor's Ph #: \_\_\_\_\_

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, \_\_\_\_\_

snakebite, \_\_\_\_\_

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.

### Sample Bicycle Safety Checklist

- Frame - Clean and not bent out of shape. No cracks at Frame Joints .
- Front Fork - Clean and not bent out of shape. No cracks at Fork Joints .
- Headset Bearing - Well lubricated; turns freely with no binding. No perceptible play in the assembly.
- Bottom-Bracket Bearing - Turns freely with not more than barely perceptible play in the bearing.
- Crank Arms - Clean and not bent out of shape. Tightened securely on the Crankset Axle .
- Chainrings - Clean, not worn, and not bent out of shape. Chainring Bolts tightened securely to hold Chainrings to Crankarms.
- Pedals - Bearings well lubricated; turn freely with no play in the bearing. Pedals tightly screwed into Crankarm. Toe Clips functional.
- Fenders - Clean; tightly attached without rattling or rubbing against the Tires .
- Wheels - Run true and round. Wheel nuts tight. Closed and tight quick-releases . Centered in form or frame members.
- Wheel Bearings in hubs - Well lubricated and properly adjusted to move freely with no more than barely perceptible play.

- Spokes - None broken or bent. Tightened to a uniform tension.
- Tires - Good Tread . Valves 0 completely airtight. Properly inflated to recommended pressure.
- Rims - Clean of all oil and grime. Free of dents or kinks.
- Chain - Proper tension, allowing 1/2 inch of play. No stiff links. Clean, lubricated, and wiped of excess lubrication.
- Gearing - Clean and oiled. Three-speed gears adjusted to eliminate all slipping. Front 42a and Rear 4b derailleurs adjusted for proper shifting with Shifters 4c.
- Brakes
  - 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 3/16 inch of rubber on Brake Pads . Brake pads aligned with rims and contact rims with a minimum of movement of Hand Controls . No squeal when brakes are used.
- Cables - No frayed ends. No broken strands. All taut.
- Handlebars - Tightened securely. Grips not worn; fit snugly, adjusted to comfort of rider, ends plugged, & in line with wheel.
- Saddle - Height, tilt, and fore/aft position adjusted to rider. All adjustments securely tightened. Seatpost not extended beyond maximum mark on post.
- Lights - Front light visible for 500 feet. Generator or battery in good operating condition.
- Rear Red Reflectors/Lights - Visible for 300 feet. Lights/Blinkers functional with generator or batteries.
- Bell or Horn - In good operating condition. All accessories well tightened and securely fastened. No broken frames or fasteners.
- Bike Registration - If required by local law, must be displayed on frame.

**3) Show your bicycle to your counselor for inspection. Point out the adjustments for repairs you have made.**

Counselor: \_\_\_\_\_

Please make sure the Counselor initials this on your application. You can have multiple Counselors for one merit badge.

**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 breaks 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. \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Know the bicycle safety guidelines. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8) Avoiding main highways, take two rides of ten miles each, two rides of fifteen miles each, and two rides of twenty-five miles each. You must make a report of the rides taken. List dates, routes traveled, and most interesting things seen.

Ride 1 – 10 Miles                      Date: \_\_\_\_\_                      Miles: \_\_\_\_\_

Route: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_

Ride 2 – 10 Miles                      Date: \_\_\_\_\_                      Miles: \_\_\_\_\_

Route: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_

Ride 3 – 15 Miles                      Date: \_\_\_\_\_                      Miles: \_\_\_\_\_

Route: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_

Ride 4 – 15 Miles

Date: \_\_\_\_\_

Miles: \_\_\_\_\_

Route: \_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ride 5 – 25 Miles

Date: \_\_\_\_\_

Miles: \_\_\_\_\_

Route: \_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Ride 6 – 25 Miles

Date: \_\_\_\_\_

Miles: \_\_\_\_\_

Route: \_\_\_\_\_  
\_\_\_\_\_

Most 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 8 hours.

50 Mile Ride

Date: \_\_\_\_\_

Miles: \_\_\_\_\_

Time: \_\_\_\_:\_\_\_\_

Route: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Most interesting things seen: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_