



# Cycling

## Merit Badge Workbook

This workbook can help you but you still need to read the merit badge pamphlet (book). No one can add or subtract from the Boy Scout Requirements #33216. Each Scout must do each requirement. Merit Badge Workbooks and more: [Online Resources](#). Send comments to the workbook developer: [craig@craiglincoln.com](mailto:craig@craiglincoln.com). Requirements revised: 2005, Workbook updated: June 2009.

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. \_\_\_\_\_

**3. Show your bicycle to your counselor for inspection. Point out the adjustments for 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 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.** \_\_\_\_\_

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\_\_\_\_\_

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**Compare them with motor-vehicle laws.** \_\_\_\_\_

\_\_\_\_\_

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

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

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

**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:** \_\_\_\_\_

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**Ride 4 – 15 Miles**

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

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

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

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

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**Ride 5 – 25 Miles**

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

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

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

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

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**Ride 6 – 25 Miles**

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

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

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

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

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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: \_\_\_\_\_

**Online Resources:** (Use any Internet resource with caution and only with your parent's or guardian's permission.)

**Boy Scouts of America:** ► [scouting.org](http://scouting.org) ► [Guide to Safe Scouting](#) ► [Age-Appropriate Guidelines](#) ► [Safe Swim Defense](#)  
 ► [Scout](#) ► [Tenderfoot](#) ► [Second Class](#) ► [First Class](#) ► [Rank Videos](#) ► [Safety Afloat](#)

**Boy Scout Merit Badge Workbooks:** [usscouts.org](http://usscouts.org) -or- [meritbadge.org](http://meritbadge.org)    **Merit Badge Books:** [www.scoutstuff.org](http://www.scoutstuff.org)

### **Requirement Resources**

These resources and more are at: <http://meritbadge.org/wiki/index.php/Cycling> and [Cycling Skills](#).

*Note: The Boy Scout Cycling Merit Badge does not specify the type of cycle that is to be used. Scouts have completed Cycling Merit Badge using traditional bicycles, specially adapted bicycles, handcycles, three-wheel bicycles, and quadracycles.*

*Local riding clubs, national organizations, and manufactures can assist those with many special needs. See [Cycling Skills](#).*

1. **First Aid:** [Hypothermia](#) - [Heat Reactions](#) - [Frostbite](#) - [Dehydration](#) - [Insect Stings](#) - [Tick Bites](#) - [Snakebites](#) - [Blisters](#) - [Hyperventilation](#)

- Your handbook is your primary reference. See [First Aid Skills](#) for step-by-step instructions and lesson video links.
- **See also:** [First Aid Merit Badge Pamphlet](#) - [First Aid Kit](#) - [Emergency Kit](#) - [Guide to Safe Scouting](#) - [Physical](#)

2, 3. [Bike Maintenance](#). The sample Bicycle Safety Checklist is below.

- [State Bike Laws & Bike Maps](#) - [State Helmet Laws](#) - [City Bike Helmet Laws](#)

3. [Bike Maintenance](#) - [Bike Chain](#) - [Bike Gears](#) - [Bike Brakes](#) - [Bike Seat](#) - [Bike Headset \(Steering tube\)](#)

4. [Bike Riding Skills](#)

5. [Bike Tires](#)

6. [Bike Riding Skills](#)

7. [State Bike Laws & Motor Vehicle Laws - Bicycle Laws in Your State](#)

8, 9. The Ride Logs are in the [Cycling Worksheet](#).

### **General Resources**

Bicycling Magazine: <http://www.bicyclingmagazine.com>

Mountain Bike Magazine: <http://www.mountainbike.com>

American Bicycle Association: <http://www.ababmx.com/>

League of American Bicyclists: <http://www.bikeleague.org/>

USA Cycling: <http://www.usacycling.org/>

BMXPLUS! Magazine: <http://www.bmxplusmag.com>

Adventure Cycling Association: <http://www.adv-cycling.org/>

Intl. Mountain Bicycling Association: <http://www.imba.com/>

Nat. Off-Road Bicycle Assn.: <http://www.usacycling.org/mtb/>

**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.