

Cycling Merit Badge Workbook

Troop 695 – Revised: 8/30/10

Scout: _____

Counselor: Mr. Ness

#	Requirement	Completed
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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 safely ride 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.	

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Requirement #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.

How do I prepare for the requirement?

- We will be reviewing the symptoms, treatment, and prevention of all of these injuries or illnesses at the 8/31/10 Troop meeting.
- All this first aid information is in your Scout handbook.

How do I get the requirement signed off?

- We will have a 'SHOW' station for the scout at the September campout.
- Schedule a time with Mr. Ness.

Hypothermia	
Heat Reactions	
Frostbite	
Deyhdration	
Insect Stings	
Tick Bites	
Snakebites	
Blisters	
Hyperventilation	

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Requirement #2

Clean and adjust a bicycle. Prepare it for inspection using a bicycle safety checklist. Be sure the bicycle meets local laws.

Requirement #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.

How do I prepare for these requirement(s)?

- Mr. Ness will be reviewing these requirements at the 8/31/10 Troop meeting.
- A bicycle safety checklist is attached to the end of this workbook.
- Several reliable web sites contain Information on bike maintenance. Some links can be found here: http://meritbadge.org/wiki/index.php/Cycling_Skills

How do I get the requirement signed off?

- Before any of the rides you may check with Mr. Ness and ask to have your bike inspection. But PLEASE let him know ahead of time so the inspection can be arranged prior to the ride.
- We may have some extra 'Inspection' dates.
- Schedule an individual time with Mr. Ness.

Requirement #4

Describe how to brake safely with foot brakes and with hand brakes.

How do I prepare for these requirement(s)?

- Learn to brake!
- Watch the skit at the 8/31/10 Troop meeting.

How do I get the requirement signed off?

- Attend the 8/31/10 Troop meeting.
- Or find Mr. Ness at one of the rides and show him you know you to use your brakes.

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Requirement #5

Show how to repair a flat. Use an old bicycle tire.

How do I prepare for these requirement(s)?

- We will present and learn about this on the September campout.
- Several reliable web sites contain Information on bike maintenance. Some links can be found here: http://meritbadge.org/wiki/index.php/Cycling_Skills

How do I get the requirement signed off?

- Attend the campout and participate in the requirements stations.
- Schedule a time to show Mr. Ness.
- For this one, we 'may' schedule a separate event to help scouts complete the requirement.

Requirement #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 safely ride along a row of parked cars.
- F. Cross railroad tracks properly

How do I prepare for these requirement(s)?

- This information will be presented at the 9/7/10 troop meeting.
- This information can be found in the Cycling Merit Badge book or online.

How do I get the requirement signed off?

- Attend the 9/7/10 troop meeting.
- Attend the September campout and arrange a time with Mr. Ness.
- Schedule a time with Mr. Ness around one of the bike rides.
- Try to schedule a different time with Mr. Ness.

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Requirement #7

Describe your state’s traffic laws for bicycles. Compare them with motor-vehicle laws. Know the bicycle-safety guidelines.

How do I prepare for these requirement(s)?

- We will present and learn about these at the 8/31/10 troop meeting.
- Study the following two sections on MN rules and the BSA bicycle safety guidelines.
- Read more about MN state laws at: <http://www.sharetheroadmn.org/index.html>

How do I get the requirement signed off?

- Attend the campout and participate in the requirements stations.
- Schedule a time with Mr. Ness.

MN Rules of the Road (Source: <http://www.sharetheroadmn.org>)

Minnesota’s streets, roads and highways provide transportation for a variety of vehicles—cars, trucks, motorcycles and, yes, bicycles. By following eight rules of the road, bicyclists and motorists can share the road more safely and enjoyably. After all, bicycle safety is a two-way street. Click on each Rule for more details.



ONE Bicyclists may ride on all Minnesota roads, except where restricted.



TWO Bicyclists should ride on the road, and must ride in the same direction as traffic.



THREE Motorists must at all times maintain a three-foot clearance when passing a bicyclist.



FOUR Bicyclists must obey all traffic control signs and signals, just as motorists.



FIVE Motorists and bicyclists must yield the right-of-way to each other.



SIX Bicyclists must signal their turns and should ride in a predictable manner.



SEVEN Bicyclists must use a headlight and rear reflectors when it's dark. To increase visibility, add a rear flashing light.



EIGHT Bicyclists should always wear helmets.

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BSA Bike Safety Guidelines

The following guidelines and procedures apply to all BSA unit, council, and national program activities involving bicycling.

1. Qualified Supervision

All unit, district, council, and national event activities must be supervised by a mature and conscientious adult at least age 21 who understands and knowingly accepts responsibility for the safety of children in his or her care, who is experienced with the skills and equipment involved in the activity, and who is committed to compliance with these BSA safety guidelines.

2. Physical Fitness

Biking is strenuous. Long treks and hill climbing should not be attempted without training and preparation. For Scouting activities, all participants must present evidence of fitness with a complete health history from a physician, parent, or legal guardian. The adult supervisor should adjust all supervision, discipline, and protection to anticipate any potential risks associated with individual health conditions. In the event of any significant health conditions, proof of an examination by a physician should be required by the adult leader.

3. Helmets and Clothing

All cyclists must wear a properly sized and fitted helmet approved by either the Snell Memorial Foundation, CPSC, or ASTM standard. Layer your clothing for warmth on cool days so you can avoid chilling or overheating. Cover up for sun protection on clear days.

4. Buddy System

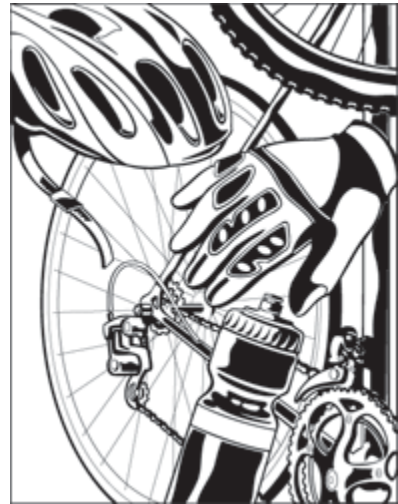
When the program activity is a bicycle expedition or trek, the buddy system must be used. When a program element emphasizes individual performance skills, one buddy observes while the other takes his turn. In competitive activity where the buddy concept cannot be applied practically, all activity must be directly observed by the adult supervisor. (Youth members should be taught that biking with a buddy is best. When biking alone, apart from Scouting activities, youth members should be encouraged to tell someone their route, schedule, and destination before departing.)

5. Position in Traffic

Ride with the traffic flow, as far to the right as is safe. Avoid curbs, storm drains, soft or loose gravel on shoulders, and other hazards.

6. Safety Rules

Obey all traffic laws, signs, signals, and street markings. Watch for changes in road conditions. Ride only one to a bike. Do not ride after dark. No stunts -- trick riding is only for professionals who use special equipment. Yield to motor vehicles even if you think you have the right-of-way. Never hitch a ride on another vehicle. Keep your head and ears open and do not wear headphones while riding.



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7. Turns and Intersections

Look left, right, back, and ahead before turning. Stop and search all directions when entering a street from a driveway, parking area, sidewalk, or alley. Signal all turns using universal hand signals. Walk your bike through or across busy intersections.

8. Equipment

Ride only a bike that fits you. Select a bike that permits you to put both feet on the ground while standing over the top tube. The handgrips should be no higher than your shoulders or lower than your seat.

9. Bicycle Accessories

Every bike needs a horn or bell and reflectors (front, back, and sides). Items should be carried only in baskets, in saddlebags, or on a rear carrier rack. If you must ride in traffic, a bike- or helmet-mounted mirror is recommended. For long trips, a bike-mounted container for drinking water is recommended.

10. Maintenance

Keep your bike clean and well maintained, especially the brakes and drive chain.

11. Racing

Open street racing is dangerous. Race only with supervision on marked courses that have been set up to exclude other vehicle or pedestrian traffic, to eliminate fall hazards and minimize collision risks. Clearly define "start" and "finish" points.

12. Planning

Plan both the route and timing of bike trips to avoid heavy traffic and hazardous conditions. Biking is unsafe on wet pavement and on windy days. Plan for at least hourly rest stops and a maximum of approximately six hours on the bike per day.

13. Discipline

All participants should know, understand, and follow the rules and procedures for safe biking, and all participants should conscientiously and carefully follow all directions from the adult supervisor.

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Requirement #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.

How do I prepare for these requirement(s)?

- Maintain your bike and get it inspected (Requirement #2 and #3)
- Ride!

How do I get the requirement signed off?

- Attend any of the scheduled troop rides.
- Arrange a ride for your patrol.
- Go on a ride with your family.

Ride	Date	Route/Items of Interest
10-mile		
10-mile		
15-mile		
15-mile		
25-mile		
25-mile		

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Requirement #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.

How do I prepare for these requirement(s)?

- Maintain your bike and get it inspected (Requirement #2 and #3)
- Ride!
- Ride some more!

How do I get the requirement signed off?

- Attend the planned 50-mile troop bike ride.
- Arrange a different ride with your patrol or family.

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Sample Bicycle Safety Checklist

(<http://usscouts.org/mb/worksheets/Cycling.pdf>)

- 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.