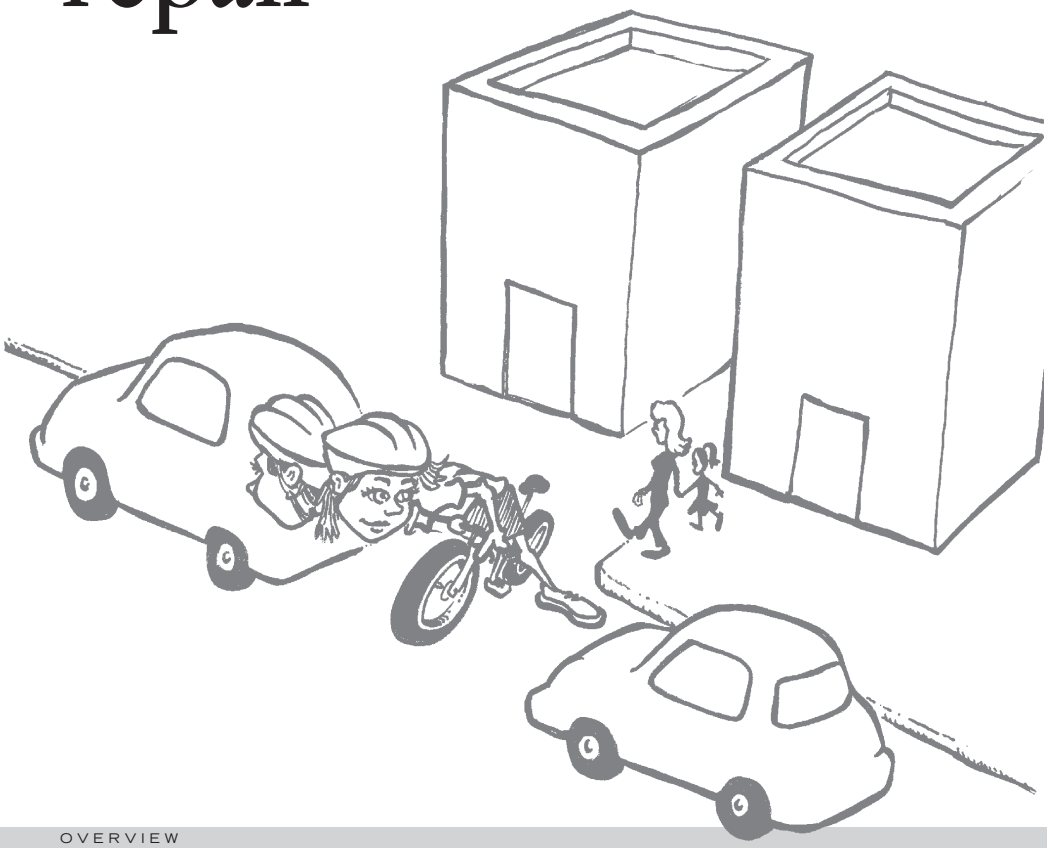
Laws, hazards and repair



LESSON 3

EQUIPMENT
- Hazards sheets
- Videos: A. *Bicycle Zone;* B. *Pedal Smarts Flat Tire Repair*
- Tire patch kits (items per every two students: 4 patches, 1 tube of glue, 1 piece of sand paper)
- Tubes (15)
- Pumps (6)
- One basic repair kit (page 90)

OVERVIEW

Purpose:
This lesson reviews traffic laws, addresses riding hazards and repairing flat tires.

Topics covered:
- Bicycle laws
- Hazards, reasons for collisions
- Repairing flat tires

STATEWIDE EDUCATION GOALS

Health
Controllable health risks
- Understand and apply prevention and risk reduction strategies
- Predict consequences of behaviors

Healthy relationships

Physical education
Expressive and efficient movement
- Demonstrate an understanding of the rules to be followed during participation in specified physical activities

Self-management and social behavior
- Apply rules, procedures and etiquette that are safe and effective for specific activities/situations

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BACKGROUND

WHAT: Re-discuss the rules of the road (see *Lesson 1*).

PURPOSE: It is essential that students have a long-term, basic understanding of the rules of the road.

LESSON

RULES OF THE ROAD REVISITED

Review the discussion about laws in *Lesson 1*. Topics include:

- riding on the right,
- identifying and abiding by all traffic signs,
- signaling before turning,
- riding single file,
- helmet law,
- right-of-way rules through intersections,
- predictable riding.

Move on once students have a basic understanding of riding like a vehicle.

LESSON

BACKGROUND

COMMON REASONS FOR COLLISIONS

DISCUSSION
10 MINUTES

Interestingly enough, about 85% of all bicycle crashes do not involve a motor vehicle. Is this what our bicycle crash journal stories told us?

(TEACHERS, you may want to re-discuss the crash stories here).

But, the worst bicycle accidents occur when crashing with a car. Youths are at fault almost all of the time when they do crash with cars. Therefore, most really bad accidents can be avoided by smart cycling.

What are the frequent causes of major bicycle crashes for youths?

THE two top reasons are:

- cyclists come out of a driveway, don't stop and crash with a car
- cyclists fails to comply with the right-of-way rules at intersections, such as running stop sign

Brainstorm other ideas about why bikes crash, why bikes crash into cars:

- failure to yield when changing lanes, or swerving into traffic.
- bicyclists ride the wrong way on a street and crash with a car
- when a motorist turns left
- sidewalk cycling
- when motorists turn right
- when motorists restart from stop sign.

Generally, riding like a car (i.e. following the laws and driving rules) will prevent crashes with cars. Other crashes can only be prevented with increased cycling skills (example: avoiding glass and hazards). We will teach some of those things next in the lesson and later during this curriculum.

WHAT: A discussion about the common reasons for collisions

PURPOSE: Because the majority of youth bicyclists who crash with cars are at fault, the information in this lesson will work to decrease these crashes.

For more detailed crash data, see *Handouts,* page 99.

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BACKGROUND

WHAT: A discussion about and activity identifying riding hazards. Avoidance techniques are taught during *Lesson 8.*

PURPOSE: To increase knowledge of hazards so they can be identified and avoided while riding the bicycle. This exercise will increase safety while cycling.

There are three main types of hazards: surface, collision and visual. The Hazards Handout depicts many of these.

Surface hazards: include glass, storm grates, potholes, railroad tracks, rain, ice, or leaves.

Collision hazards: include turning cars, other bikers, pedestrians, dogs, and trains. Also included are parked cars with opening doors.

Visual hazards: block a bicyclists view. They include bushes, fences, other cars, buildings, and too little light at night.

LESSON

HAZARDS IDENTIFICATION

MATERIALS:

- "Find 10 Hazards" worksheet, p. 99

1. Discuss the types of hazards with the class. Explain the problems and threat that these hazards pose.

2. Distribute the hazards handout sheet, have each student circle the hazards and list them on side of the sheet.

3. Review the sheet. Discusses avoidance of the hazards with the class. We will practice avoidance on the bicycle at a later time.

LESSON

BACKGROUND

FIXING A FLAT TIRE

MATERIALS

REPAIR TOOLS:

- 3 tubes of glue/ 10 students per)
- 1 patch per 2 students
- 2 tire irons per/rim with tire
- 1 pump/5 students
- Sandpaper
- Innertubes (at least 1 per 2 students)
- Rims/tires (optional)
- Chalk or light colored marker
- Pump (normally on bike)

SMALL TOOL BAG:

- Patch kit (patches, glue and sandpa-
- Y-wrench
- Rag
- Tire irons
- Small flat-head screwdriver
- Band-Aids
- Water resistant electrical tape
- Important hex keys

Note: The inner tubes and rims used for this lesson should not be the ones used on the fleet of bicycles but instead old, used equipment.

WHAT: An activity where students patch a flat tire

PURPOSE: Flat tires occur relatively frequently when bicycle riding. Cyclists need to be able to fix flat tires in order to continue their ride when they get flats, otherwise have a good walk!

❶ Introduce the lesson: this lesson teaches how to fix a flat. Of course, you can't fix the flat if you don't carry the tools with you, so I always carry some basic tools in case of emergency (show them small tool bag).

❷ Discuss potential road hazards that cause flats. Glass and nails are very common.

❸ Demonstrate or have student demonstrate repairing a flat. (If a student demonstrates, stress that they talk loudly).

❹ How to: Assuming we have rims, tires and tubes, the tube must be taken out from between the tire and rim, patched or replaced and put it back in.

How to fix a flat:

- Take one side of the tire off of the rim with the tire irons (not the whole tire off),
- Take the tube from between the tire and rim and pull the tube out starting with the side opposite the air valve.
- Pull tube out.
- Check the tube to find the hole. Usually this is easily done by pumping up the tire and feeling for the air coming out. Mark the hole with a marker or chalk.

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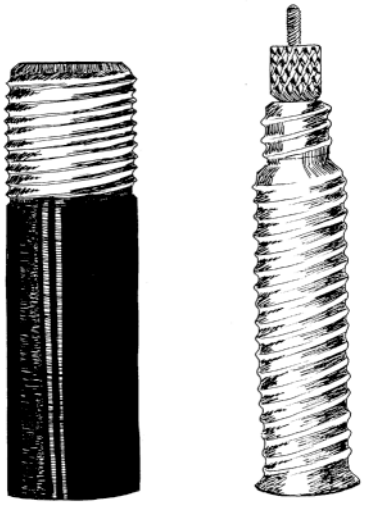
- Sand hole, apply enough glue over the hole to touch entire surface of the patch but don't glob it on. Wait till dry, they say 5 minutes (but you can blow on it and it dries fast). Either way, be sensitive to the amount of time required to wait for glue to dry.
- Apply patch over entire hole and press it firmly.
- Check the patch by pumping up the tire and listening for sounds. If it holds, release the air (not all of the way) and replace tube on rim.
- To replace the tube on the rim, first put the valve stem into the valve hole. Work from the side where the tire is off the rim. Push the tube in between the rim and tire, making sure it is not twisted.
- Put the tire back on the rim (over the tube) and pump up the tube. Normally, a cyclist would have to put the wheel back onto the bike.



Two types of valves

BICYCLE VIDEO

Optional

MATERIALS

- *First Gear* (21 minutes)
- *The Bicycle Zone* (12 minutes)
- *Pedal Smarts* (18 minutes)

Show a video to reinforce skills, concepts and rules before the students ride their bicycles. Discuss main elements of the video.

JOURNAL ASSIGNMENT

What have you learned about bike safety? Describe how you are supposed to ride your bike around the community. On what side of the street? How do you interact with traffic signs and signals. What types of things have you or do you normally see people doing wrong when cycling?

Read Journals

As a wrap-up, find out what students learned during this week. You can ask some of the original survey questions again to see if you get a change in response. How did students like these lessons. If time permits, allow students to read their journal essays.

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BICYCLE INVESTIGATION

Optional

Continue the work plan as set out in *Lesson 2*. Count the bicycles parked at the bicycle racks.

Consider having a speaker come in and discuss bicycle ridership, the bicycle facilities that are in place, and the City's support for education of cyclists. Ask what they are doing to make the city safer for kids to cycle. See *Resources* for potential speakers including City planner, police officer, bicycle club member, bicycle shop employee.

Other Optional Activities

Route Selection

Factors in considering route selection: Where are you? Where do you want to go? What is a safe route?

Traffic: Lower traffic streets may be better to bike on. We should all be concerned with crossing major streets.

Stop signs and stop lights: It is better to have these controls at intersections with high traffic roads.

Others: Street conditions (especially avoid train tracks); the scenery; time.

Consider discussing this topic before and after riding around in traffic. In addition, consider the mapping activity in the BTA's *Safe Routes for Kids – Transportation Alternatives and Solutions* curriculum.

Community Service Project: Posters

Make bicycle safety posters that can be hung around the school and around the community. Bring large pieces of paper and get proper art supplies. Give the students the laws and information to give them ideas for the poster. Bring pictures of bikes so they can draw them. (The BTA also has promotional posters available.)