BICYCLE SAFETY UNIT
LESSON 2 OF 3: TRAFFIC SAFETY
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TRAFFIC SAFETY

4th Grade. Classroom setting.

Traffic Safety addresses how to safely and legally bike with other road users. Using a small-scale road and models, proper cycling technique is demonstrated. Other activities get students on their feet to experience traffic laws first-hand. Time allowing, mechanical knowledge is highlighted in two activities. A competitive pump race pleases the crowd while explaining how to use a bike pump. The Quick Draw challenge gives students one minute to correctly label as many bike parts as possible.

OBJECTIVE

1. Recall the benefits of biking, ABC bike check, and helmet fit.
2. Identify why traffic on the road is organized by laws.
3. Recognize that bikes and cars follow the same basic traffic laws.
4. Give examples of how cars and bikes share the same road and rules.
5. Negotiate a stop-sign intersection.
6. Draw at least five parts on a bicycle.
7. Describe how a bike pump inflates a bike tube.

ACTIVITIES

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<td>Chaos Box (5 min)</td>
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<td>Traffic Safety Game (15 min)</td>
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<td>Traffic Safety Game (15 min)</td>
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<td>+/- Pump Race (5 min)</td>
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<td>+/- Quick Draw (5 min)</td>
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MATERIALS

30-45 minutes

- Review:
  Eight Transportation Cards, bike and helmet
- Chaos Box & Intersection Challenge:
  4 small cones
- Traffic Safety Game:
  Playmobil, 1:24 scale: bicycle and rider, large recycling truck, and pedestrian.
  Traffic mat: 2’ X 3’ printed on vinyl, 1:24 scale street width (narrow roads)
  Set of quiz cards with illustrations

60 minute extension

- Pump Race: at least two sets of portable bike pump and inner-tube
- Quick Draw: white-board/markers or writing materials, blank-label bike work-sheet.

LESSON PROCEDURE

1. Welcome students back and thank the teacher and class for having you as a guest.
2. These classes are offered by Safe Routes to Schools of the Transportation Authority of Marin.
3. Briefly overview the three lessons.
   - Previous: Basics about the bike.
   - Today: Riding in the road with traffic.
   - Bike Rodeo: Fun bike event at your school.
**ACTIVITY: REVIEW**

Main Objective: Review three key features from previous lesson.

Students offer information from the previous lesson (Bike Safety), including the key objectives.

Procedure: 5 minutes.

1. **Call on students to remember the benefits of biking.**
   - *No air pollution, exercise, no traffic jams, and fun.* Display the Transportation Cards.

2. **Call on students to supply each step of the ABC bike check.**
   - *Air, Brakes, Check.* Model ABC check on a bike and write the steps on the board.

3. **Call on students to supply the three helmet adjustments.**
   - *Level, chin strap buckled, check.* Model helmet adjustments.

4. **Now that we have reviewed bike basics, we are going to discuss how to ride on the road.**
**ACTIVITY: CHAOS BOX**

Main Objective: Traffic on the road is organized by laws.

Students experience the need for traffic laws by role-playing road users in a small space.

Procedure: 5-10 minutes.

1. Gather students in a designated area just large enough to contain all the students.
   Use cones to mark a square if the area is too large.

**RULES:**

i. You must keep moving in this small area, set out-of-bounds.

ii. You must not bump into other traffic *(heads-up and bubble)*

iii. Set behavioral expectations:
   *Stay on your feet, keep volume low, etc.*

   - After a minute say “Freeze!”
   - Now we will have one rule, you must all move in the same direction.

   Restart activity: orient students in one direction making a circle

   Extension: send one student against the flow of traffic
   - After a minute of rotating in a circle, say “Freeze!” and return to their previous seats.

- Review activity

  *At first we had no rules, it was chaos. Imagine the roads with no rules. Then we made one rule, move in same direction. Was that easier? Traffic laws make travel easier, safer, and faster.*

5. **Cars and bikes must follow state laws so that travel is safer and easier.**

**NOTE:** If skipping Laws List, add that cars and bikes generally follow the same laws.
**+/− ACTIVITY: LAWS LIST**

Main Objective: Bikes follow the same laws as cars.

Students brainstorm laws for cars to find that the vast majority apply to bikes.

Procedure: 5 minutes.

1. **Bikes must follow the same laws as cars.**
   *Cars and bikes share the same basic laws in California.*

2. **Each student should think of three basic laws for cars.** Call on individual students to provide a law.
   - Restate the law for the car, then respond with how it applies to bikes
     - alternatively, first write a list of all the laws and then apply to bikes
   - Be sure to include *stop signs, turn-signals, and speed-limit.*

3. **Review that bikes follow the same laws as cars.**
   *Same road, same rules.*
**ACTIVITY: TRAFFIC SAFETY GAME**

Main Objective: Cars and bikes share the same road and rules

Using scale models to demonstrate, quiz questions cover the safe and legal way to bike.

Procedure: 15 minutes.

1. **Gather students around the traffic mat and establish rules.**
   i. *Please do not touch the models.*
   ii. *Wait until called upon to answer.*
   iii. *Raise your hand if you have a question.*

2. **Display each quiz card to the entire class.**
   For answers call on individuals, teams, or the entire class to answer.

**KEY QUESTIONS:**

What crash would be worse: walk/walk, bike/bike, or car/car? (Model crashes).
- Accidents involving cars often have bad injuries because cars are large, heavy and fast.
- Despite the fact we are using toys, these next questions are serious because car crashes are the *top cause of death for young people under 35* (CDC) and a top 10 cause of death worldwide (WHO).
- Most traffic deaths are people in the car. If a car and bike crash, who will get hurt worse? Walk/bikers fare the worst when involved in a car crash, regardless of fault.
- Extra care is needed when in or around cars. Everyone must help avoid crashes by paying attention (*heads-up*) and obeying the laws.

**CARS AND BIKES MUST:**

- **Stop at stop signs. T/F?**
  - Model a bike arriving at the stop, yielding to a previously stopped car

- **Signal all turns. T/F?**
  - Model simple hand turn-signals, *point to where you want to go!*

- **Drive below the speed-limit. T/F?**
  - The “limit” is the absolute fastest you are ever allowed to travel.

- **Go in the same direction as traffic. T/F?**
  - Model road wrong way, *Why doesn’t the driver see the biker?*
ACTIVITY: TRAFFIC SAFETY GAME

How Far Right is Right?
Slower vehicles should stay right, but how far right is right?

SIDEWALKS:
Sidewalks are designed for people walking. Often it is illegal to ride on a sidewalk, depending on the municipal code. There is still car traffic on sidewalks! Where? Driveways and crosswalks.

• Model cross-traffic at driveway and crosswalk.

Sidewalks and crosswalks must deal with “cross-traffic” (Hold hands like “+”) much like traffic in the road. Pay extra attention for cross-traffic, “heads-up.”

Cars and bikes must stop for anyone walking in the crosswalk, T/F?

• Model car and bike stopping for a pedestrian in a crosswalk.

NOTE: the crosswalk is for walking, not biking.

• Model biker walking in crosswalk.

What should you do before crossing the street?
Check both ways, make eye-contact, and wave whenever crossing. Model crosswalk wrong-way (should be done with car turning left into path).

If the sidewalk is for walking, where are bikes suppose to ride?
The street. Cars and bikes share the road.

Are bikes allowed to use a the full lane, like a car?
Yes. To keep the “bubble” needed for the bike. Bikes get the full lane, unless there is a safe space further right.

• Model car passing bike:
  - Wide Road: no conflict, bike on right.
  - Narrow Road: car passes too closely, bike on right.
  - Narrow Road: car waits to safely pass, bike center in lane.)

Door-zone: What is the door-zone?
Keep at least four feet away from parked cars “bubble.” Legally, people must check before opening the door.

• Model bike next to car with door open, shut door and where does that place the bike?
ACTIVITY: TRAFFIC SAFETY GAME

Should bikers swerve around parked cars or ride by in a straight line?
Never swerve in the road, move left early, check before moving left!
- Model a biker moving left early to get around parked car/garbage can.

- Scan over shoulder.
- Signal a left turn.
- Scan over shoulder.

Never move left without checking for traffic, “heads-up!”

EXTRA QUESTIONS:

What three things should you do before passing a biker/walker?
Slow, make noise (on left, ring bell), and scan for traffic behind and ahead.

How can a biker make a left turn?
A bike can make a left turn by using the left part of the lane, by making a “box turn” (stopping at an intersection and realigning with cross traffic), or by dismounting and walking.

How should a driver pass a biker?
Driver’s must slow, then wait for a safe chance to pass, often by going into the oncoming lane. Driver’s must be heads-up, and give the biker their bubble.

More people are biking every year, T/F?
True, because of the benefits.

More biking also means less crashes. Marin County biking up 66% with 34% less crashes (1998-2008).

Where do you ride your bike?
Name nearby spots to ride, highlight any bike paths.

3. Review: Cars and bikes share the road and the rules.
**ACTIVITY:**
**INTERSECTION CHALLENGE**

Main Objective: Negotiate a stop-sign intersection.

Student pass through increasingly complex intersections obeying the STOP sign and yielding to those who arrived first. Encourage communication with turn-signals and waves.

Procedure: 10 minutes.

1. **Use cones to make a small square.** Orient students into four lines directly behind the cones, facing the opposite side.

2. **Rules:**
   i. *Only one person at a time in the intersection.* (Bubble)
   ii. *You must STOP and wait your turn before entering the intersection.* (Heads-up)
   iii. *You may travel in any direction, returning to the end of a different line.*

   You will be required to negotiate a similar intersection during the Bike Rodeo.

3. Choose a student to begin the activity. Instruct students to communicate who will go next.

   Reinforce communication with turn-signals and waving to indicate who will go.

   Time allowing, try the first two scenarios before the 4-way stop.
   a. 2-way stop (2 lines)
   b. 3-way stop (3 lines)
   c. extension: time how quickly the whole class pass the intersection
   d. extension: no stops, try a round-about (a much safer and efficient design!)

4. **Review. At a stop-sign intersection:**
   stop, wait your turn and use hand signals.
** +/- ACTIVITY: PUMP RACE**

Main Objective: Bike pumps fill inner-tubes.
After explaining basic pump operation, students face-off to see who can fill an inner tube faster.

Procedure: 5 minutes.

1. Review that the “A” from the “ABC Bike Check” is for air in the tire.
   Inside the tire air is held in the tube.
   a. The valve allows air in and out of the tube
   b. Tubes must be regularly pumped up, at least once a month

2. Pumps have a lever to flip open or close around the tube-valve once it is inserted (demonstrate.)

3. Set up at least two sets of a pump and tube. Pick volunteers to face-off in competition.
   a. The winner is the first tube to be judged “full” by the instructor
   b. Split the class, each side silently cheering for their champion

4. Congratulate the participants. Review how a bike pump is used to fill the tube in a tire.

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** +/- ACTIVITY: QUICK DRAW**

Main Objective: Draw parts of the bicycle.
Quick Draw has students compete to draw a bicycle with the most parts.

Procedure: 5 minutes.

1. Review that bicycles are composed of parts such as handlebar, saddle, wheels and tires.

2. The challenge is to draw as many parts on a bicycle within a minute. It doesn’t need to be pretty.

3. A few students draw bikes on the white-board or everyone competes using scrap paper.
   a. Do not label parts. Go over the parts orally at the end.
   b. Alternate: Give students 60 seconds to point and name parts on a demo-bicycle.

3. Identify and tally the parts drawn or identified on the bicycle. Congratulate the competitors!
1. Briefly review the main objective of each activity:

Students will be able to-

a. Recall the benefits of biking, ABC bike check, and helmet fit.

b. Identify why traffic on the road is organized by laws.
   +/− Recognize that bikes and cars follow the same basic traffic laws.

c. Give examples of how cars and bikes share the same road and rules.

d. Negotiate a stop-sign intersection.
   +/− Draw at least five parts on a bicycle.
   +/− Describe how a bike pump inflates a bike tube.

2. Ask the audience for questions or comments on what they thought was important or interesting.

3. Briefly preview the next lesson, “Bike Rodeo.”

4. Thank the students and teacher for having you as a guest.