

# The Impact of Cars

Middle School

## Lesson 4: The Impact of Speeding Cars



Lesson 1: The Environmental Impact of Cars

Lesson 2: Climate Change and Cars

Lesson 3: Air Quality in Your City

→ Lesson 4: The Impact of Speeding Cars

Lesson 5: Cars Across the U.S.

Lesson 6: Speak Up for Change!

## Lesson Four

# The Impact of Speeding Cars

### BIG IDEAS

To Share with Your Students



#### → SPEEDING IS THE PROBLEM

When it comes to urban traffic safety, speeding is a major concern. Because speeding motorists have less time to react to avoid collisions, tend not to yield the right-of-way, especially when turning, it is the number one cause of injuries and deaths from driving.

#### → PEDESTRIANS IN URBAN AREAS CAN REALLY GET HURT

Speeding has serious consequences when a pedestrian is involved. At higher speeds, motorists are less likely to see a pedestrian, and are even less likely to be able to stop in time to avoid hitting one.

#### → WE CAN MEASURE CAR SPEEDS

We will use a radar detection device (also called speed gun) to measure the speed of cars in the area around your school.

### Know the Facts

- The Speed limit in New York City is 30 MPH
- In New York State, (although not enforced in New York City) the recommended school zone limit is 15 MPH.
- Two-thirds of traffic deaths in New York City involve speeding.
- In 2002, Transportation Alternatives (TA) found the average speed on Upper Broadway in Manhattan during daylight hours to be 37 mph.
- Similarly, TA regularly recorded speeds over 50 mph and an average speed of 39 mph on 4th Avenue in Brooklyn.
- A pedestrian hit at 40 mi has an 85% chance of being killed, at 30 mph, the likelihood goes down to 45%, and 20 mph, the fatality rate is only 5% (Note: you may not want to share this fact with students because it can be upsetting)

*(Sources: Transportation Alternatives: Testimony: Public Safety Committee of the New York City Council on Res. No. 338 on Deadly Drivers; Pedsafe Crash Statistics)*

### What We Will Learn

In this lesson, the students will be able to find out for themselves whether speeding is a problem in your area. We will look at the difference of car speeds on an avenue and a side street, and compare. Students learn about how speeding in school zones is particularly problematic.

### Questions of the Day



- How does speeding affect our lives?
- Why is a school zone a particularly important place to slow down speeding cars?
- How can we measure the impact of speeding cars with a radar gun around the school?

## Main Activities

The students will learn about how speeding cars affect our daily lives.

### 1) Catalyst - 2 mins

Students answer the following question in their "Livable Streets" journals: What is the impact of speeding cars on your daily life?

- Students should feel free to jot down anecdotes, emotional reactions, daily routines etc.

### 2) Talk with a Partner - 3 mins

Students share their responses with their partner. Then partners discuss the area around the school, and come up with some ideas about how cars have an impact on the "School Zone."

### 3) Share with the class - 5 mins

Ask students to share a few of their examples

- How does speeding affect our lives?
- Why is our School Zone a particularly important place to slow down speeding cars?
- How can we measure the impact of speeding cars with a radar gun around the school?

### 4) Core Activity: Speed Gun - 35 mins

Hand students the "Are Cars Speeding?" handout. Go to the second page and fill out the New York City Speed Limit (30 mph) and New York State School Zone Speed limit information (15 mph).

Explain to the students that you will be taking and recording car speeds near the school at two locations, an avenue and a side street. Each student will have a

## Quick View

<b>TIME</b>	<b>NATIONAL STANDARDS</b>
1hr	NS.5-8.1, NSS-C.5-8.5
<b>GRADE LEVELS</b>	<b>SUBJECT AREAS</b>
6th-8th Grade	Environmental Science, Social Studies

## Materials

- Speed Gun
- Speed Gun Display Board (optional)
- "Are Cars Speeding?" handout
- Clipboards or notebooks
- Blank paper for sketching
- Colored pencils or markers

chance to use the speed gun one time per location.

- First go to the avenue. Ask the students to line up and take speed readings one at a time. They need to shout out their readings so their classmates can hear what they read. They should record their readings on section A of the handout, making sure to listen carefully to their classmates when filling out the squares.
- Next head to the side street, and if there's time, have each student take at least one recording

### 5) Wrap Up - 15 mins

The students should fill out the rest of the answers to questions in section B on the worksheet. They need to add up all the readings and divide by the total number of readings to calculate the average speed for the area, and note the highest speed. They should then answer questions 5-7 on their own.

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## About Purchasing and Using a Speed Gun

- At Livable Streets Education, we have a radar gun created for law enforcement and a large display board so that all of the students can see the results of each reading. The large gun and display board are not necessary. All you need is a sports radar gun, created for use with baseball/softball teams to read pitch velocity.
- You can find out if your baseball team has one of these radar guns already. If they do not, you can purchase one for under 100 dollars from a sports store. The internet also has it's share of sites - just make sure you are looking at the sports devices, not those made for law enforcement.
- You may want to display each number as it is recorded. If you have a small white board, you can assign a student to write the number as it is collected so people can see it. It can get loud on the street and this will help eliminate confusion.

## Tips for Success

- Find some time before your lesson to practice using your speed gun so you will have an easy time showing the students how to use it.
- Be sure the speed gun batteries are charged before heading out.
- Find a spot on the sidewalk where a parked car is not obstructing your view of cars driving by. Make sure that students stay on the sidewalk at all times but can get a view of cars coming in your direction. Bus stops and fire hydrants are recommended.
- Ask students to aim the speed gun at cars driving towards where you are standing, so that cars are coming closer to the gun. Don't aim at cars driving away or passing by you. The radar device won't work if the car is not driving towards it.
- You may want to record the speeds too

## Further Resources

- Pedsafe Crash Statistics (<http://www.walkinginfo.org>)
- Transportation Alternatives (<http://www.transalt.org/>)

# Air Quality Study

Afterschool/Summer: Middle School

*Lesson 7: Better Air for Your Block!*

## Handouts

# Are Cars Speeding?

 How fast are the cars going here?

Avenue


Street




**B** Some Speed Limit facts:

1. The Speed Limit in New York City is: \_\_\_\_\_
2. The Speed Limit in school zones in New York State is: \_\_\_\_\_

**C** Conclusions:

3. What is the average speed you recorded? \_\_\_\_\_
4. What was the highest speed? \_\_\_\_\_
5. Are the majority of the cars going over or under the speed limit?

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6. Why do you think drivers speed near school zones?

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6. Do you have any suggestions for ways that we could notify drivers about the speed limit around schools?

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