



we're walking here nyc

MIDDLE SCHOOL

Step 2: Understanding the Numbers

Student Commute Recording Kit:

Bar Graph/Pie Chart

Student Commute Bar Graph/Pie Chart

PURPOSE

Use the commute data you've collected to create a bar graph or pie chart with your students. Use these numbers to discuss 'green' transportation choices and understand the results in context.

CRUNCH THE NUMBERS

1. Once you've collected your data from the entire school body or your class (either with a wall chart or the survey), your students should add up the numbers for each category. This exercise works best if the students are divided into small groups, and each group assigned to one or two transport categories.
2. Create a graph or pie chart to visually emphasize the number of walkers. Choose between the following options:
 - Choose the "Bar Graph: Average by Transport Mode" worksheet to graph the average number per transport category based on the data from all three days. First use the worksheet to consolidate the data. Students must calculate the average per day for each category. You should have three days worth of numbers. Keep the grand totals to upload onto the Walking Schools website.

AND/OR

- Choose the "Pie Chart: Percentage by Transport Mode" worksheet to graph the percentage of students who walked over the course of all three days for each category. You can use a protractor to draw accurately-sized wedges, determining the angle by creating a proportion where the percentage over 100 is equal to X over 360 degrees. Keep the grand totals to upload onto the Walking Schools website.

- Please remember that students taking public transit will count as "walkers" when we (Livable Streets Education) collect the data.

TALK ABOUT YOUR GRAPHS/CHARTS

When you are finished making your graphs or pie charts, have a discussion about the numbers. Here are some leading questions:

- If so many people walk to school, then why are streets so unsafe for pedestrians? Why is so much space devoted to cars?
- Do you think most people in the U.S. walk as much as we do in New York? Why or why not?
- What could we do to make walking even easier and safer in New York? How can we use this information to make our PSA?

LOOK AT THE FACTS:

Read through "Know the Facts" and discuss some of the connections with the data collected. How do your numbers compare?

CONTENTS OF THIS KIT

- "Bar Graph - Average by Transport Mode"
Requires that students calculate the average
- "Pie Chart - Percentage by Transport Mode"
Requires that students calculate percentages
- Know the Facts: Getting Around the City

OTHER MATERIALS

You may need a few other materials, that are not provided in this kit. These include:

- Rulers
- Colored markers or pencils for the graph
- Protractors

Bar Graph: Average by Transport Mode

1. First, calculate the average number of students per day that took each mode of transportation, adding up the numbers and dividing by 3 (the number of days that you took data.)


DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

average # of bike riders




DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

average # of walkers




DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

average # of public bus riders




DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

average # of school bus riders




DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

average # of car riders




DAY 1

+ DAY 2

DAY 3

= ÷ 3 =

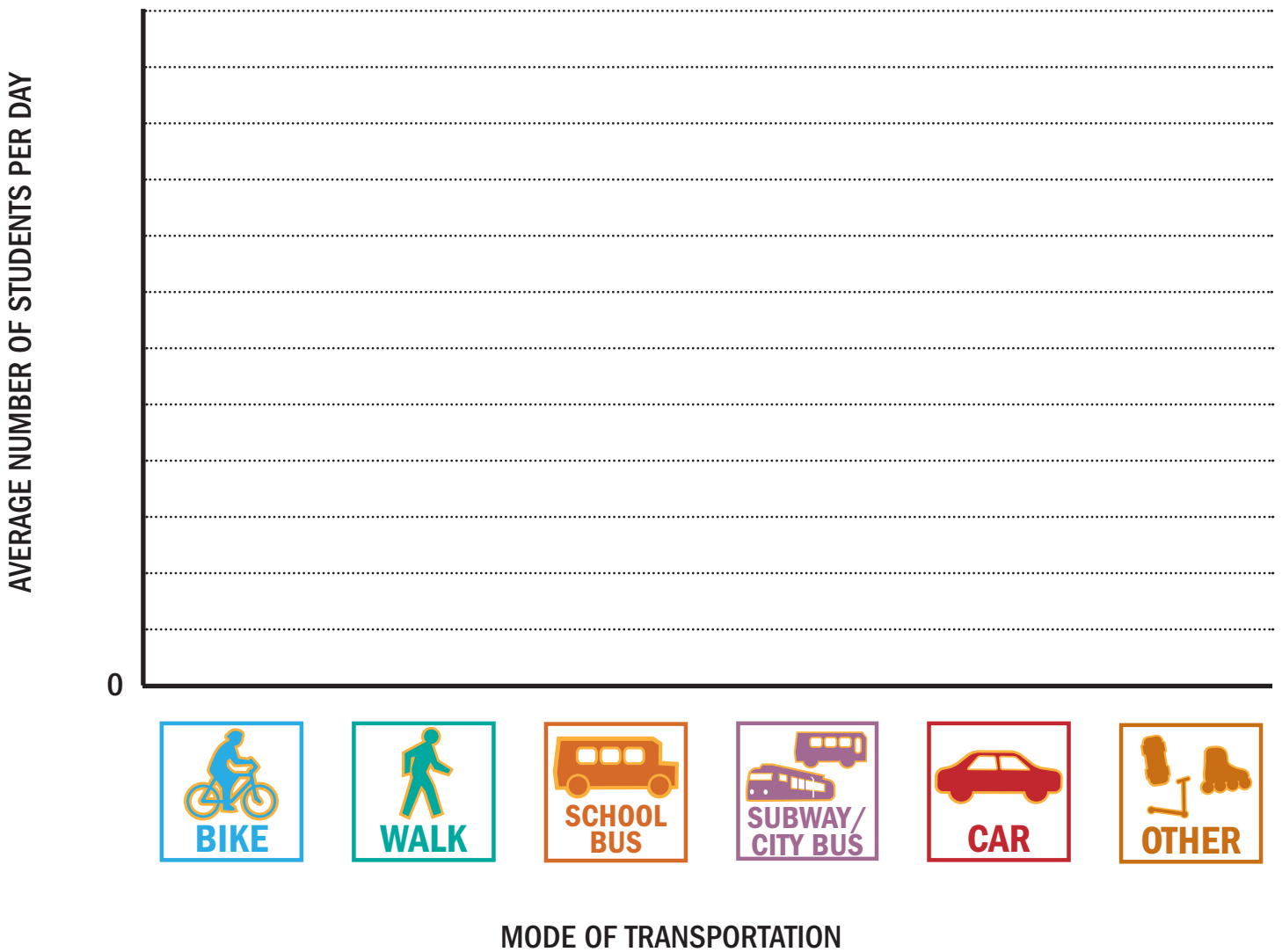
average # of other



- Step 1: Who's Walking Here?
- Step 2: Understanding the Numbers
- Step 3: Sharing your Message

Bar Graph: Average by Transport Mode

2. Fill out the bar graph below with the average number of students on the Y-axis. Figure out what increment you will use before you start.



Pie Chart: Percentage by Transport Mode

1. First, add up the total number of trips taken per mode of transportation over the three day period. Next, find the total number trips (all modes) over the three day period. Lastly, calculate the percentage of trips taken per mode over the three day period.



DAY 1	.....	.....	.....	.....	.....	.....
+ DAY 2	.....	.....	.....	.....	.....	.....
DAY 3	.....	.....	.....	.....	.....	.....

.....	+	+	+	+	+	+	=	<div style="border: 1px solid gray; width: 40px; height: 40px; display: inline-block;"></div>
Total number of bike riders		Total number of walkers		Total number of bus riders		Total number of transit riders		Total number of car riders		Total number of other				Total number of trips taken over 3 days

BIKE

Total number of bike riders: = %

Total number of trips taken: = **100%**

SUBWAY/CITY BUS

Total number of transit riders: = %

Total number of trips taken: = **100%**

WALK

Total number of walkers: = %

Total number of trips taken: = **100%**

CAR

Total number of car riders: = %

Total number of trips taken: = **100%**

SCHOOL BUS

Total number of bus riders: = %

Total number of trips taken: = **100%**

OTHER

Total number of other: = %







Total number of trips taken: = **100%**

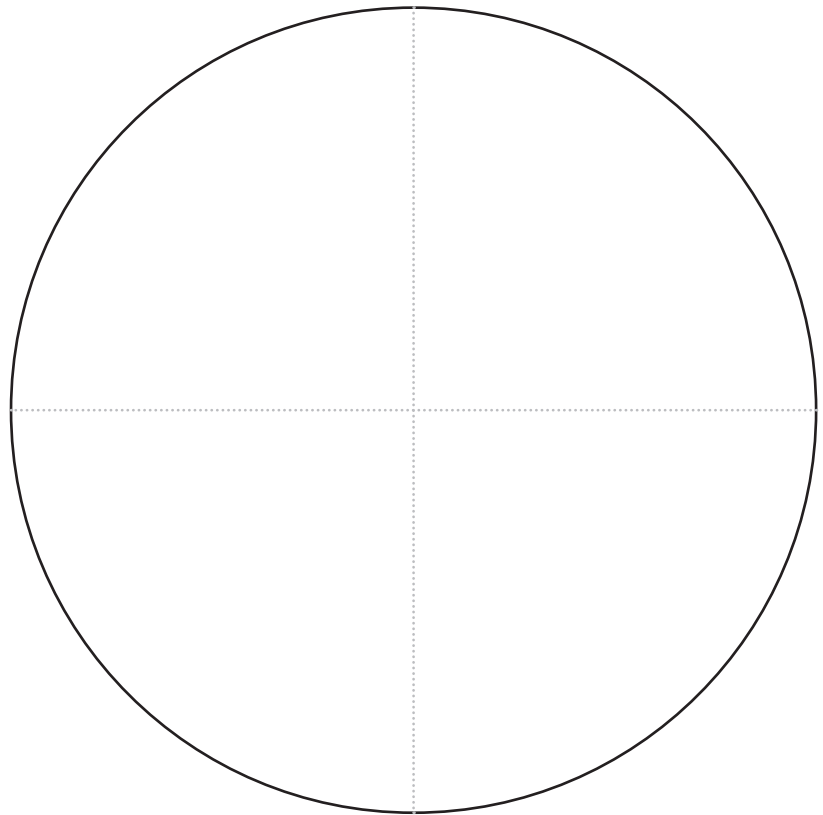
- Step 1: Who's Walking Here?
- Step 2: Understanding the Numbers
- Step 3: Sharing your Message

Pie Chart: Percentage by Transport Mode

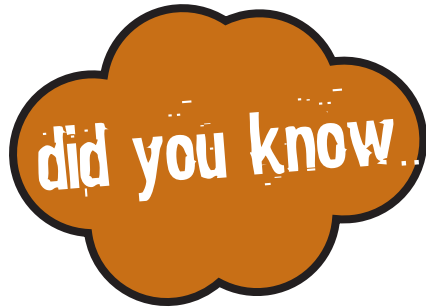
2. Fill out the pie chart below with the appropriate percentages based on your data.

Don't forget to label your chart!

 BIKE	_____ %
 WALK	_____ %
 SCHOOL BUS	_____ %
 SUBWAY / CITY BUS	_____ %
 CAR	_____ %
 OTHER	_____ %



Know the Facts: Getting Around the City



- Close to 80 percent of students walk to school, when include those who walk to and from transit
- In the rest of America, only about 13 percent of students walk to school each day.
- Out of the five boroughs, the Bronx has the most kids who walk – 9 out of 10 – and Staten Island has the fewest.
- Getting to work, only 23 percent of New Yorkers drive; the rest take public transit, walk, or bike.
- Over 25% of ALL land in New York City is devoted to roads



about the environment

- New York is considered one of the greenest cities in the country because so many people use walking, cycling, the subway, and buses to get around town
- NYC drivers account for 60% of NYC transportation-related CO₂
- This CO₂ that cars put out contribute to climate change
- Walking or biking produces NO pollution

WHAT FACTS SURPRISED YOU?



walking and your health

Walking regularly (3 hours a week—or 30 minutes a day) is great because...

- It's one of your body's most natural forms of exercise
- Doesn't require practice
- Improves your mood
- Keeps you strong and fit

Resources

Union of Concerned Scientists, "Cars, Trucks, & Air Pollution"
Streetswiki, "New York City Vehicle Ownership"
Planetizen, "Removing Cars to Promote Public Space"
Drum Major Institute, "Reclaiming our Public Space for People, Not Cars"
Quinnipiac University Polling Institute Poll "July 29, 2009 - New York City Voters Like Car-Free Times Square"
Transportation Alternatives "Rolling Carbon"
Environmental Defense Fund, "Transportation"
The Mayo Clinic "Walking for Fitness"
Sustain Lane "US City Rankings"
NYC Department of Transportation