



**Project Option C:
Alternative Driver's Ed
Chicago Conservation Corps (C3) Student Clubs**
City of Chicago Department of Environment (DOE)



By participating in this Air & Energy Project, Club members will:

1. Recognize the environmental issues associated with our transportation system, and the benefits of green alternatives like driving, biking, walking, and taking the train or bus.
2. Create a presentation based upon your findings.
3. Use the presentation to educate members of your school and community about alternatives to driving.

Overview

The following project encourages you to develop a creative, engaging presentation that will encourage your fellow students, teachers, staff, and/or community members to change their transportation habits in an effort to have less impact on the environment. These presentations can be in any format, so long as they convey information about the environmental and health implications of driving, and easily accessible alternatives in your community.

You will develop a presentation based on statistics related to driving in Chicago, consequences of driving on the environment, human health, and individuals' finances, and local alternatives to driving. In order to develop this presentation, you will need to do some research. The Chicago Department of Environment (DOE) has provided some great resources in this guide that its staff finds useful for researching transportation. You are encouraged to use this information (and the information you find on your own) in your presentation.

Once you have a well-researched, engaging presentation prepared, you will share it with as many different audiences as possible in the time provided.

Materials

- Chicago Bike and CTA maps (provided by C3)
Please note: To request maps for distribution, please e-mail us at conservation@cityofchicago.org and we will mail them to your school. Allow 1-2 weeks for shipping. You can also request Chicago Bike Maps directly by e-mailing kate.ibara@cityofchicago.org, or CTA maps by calling 312-836-7000.
- PowerPoint or Posters for creating presentation

The online report for this project is due:

Friday, March 20th

**To submit your report, log-in at
www.chicagoconservationcorps.org
(click on "C3 Teachers")**

Note: Teacher stipend check is contingent on the timely completion of this report.

If you have questions or concerns, contact:

Jeff Walter
Chicago Department of Environment
312-743-9283
conservation@cityofchicago.org

Why should we do this project?

70 million motor vehicles were on the world's roads in 1950. By 1994, there were nine times that number, or 630 million motor vehicles. If the current growth rate continues, there will be 1 billion motor vehicles in the world by 2025. When you consider the fact that 12,000 pounds of carbon dioxide are emitted by the average car each year, this means serious implications for both environmental and human health.

Currently, 21 percent of Chicago's greenhouse gas emissions are produced by cars, trucks, buses and trains.

Fortunately, there are easy ways to change this figure for the better! Chicago has abundant public transportation, walking, and biking options, and with the city's current efforts to mitigate the effects of climate change, there is plenty of support for improving these options in communities throughout the city.

Are people in your school and community making use of alternative means of transportation as much as they could be? How can you start Alternative Driver's Education at your school?



Create the Presentation (2-3 meetings)

(The first meeting can be combined with the last meeting of the Air & Energy Audit)

1. Introduce the project.

- Play the **game** on this page. Use this activity as a means to discuss the link between driving, greenhouse gas emissions, and climate change.
- **Introduce the goal of this project:** to educate your classmates, teachers, school staff, and/or community members about alternative transportation, and to inspire them to adopt more sustainable means of getting from place to place.
- Distribute the attached **Student Fact Sheet (p.7)** and explain that students will be creating and presenting a presentation on alternatives to driving.
- Use the **Opportunities for Research Worksheet (p.9-10)** to help students begin to research this topic.

2. Start to plan your presentation.

- **Discuss who your audience will be** and what type of presentation will suit your audience.
- Obtain **permission** to give your presentations (from administration, teachers, etc.).
- **Work with the instructor of your school's Driver's Ed class** to find a time when the Club can present to his or her class. If Driver's Ed does not exist at your school, brainstorm ideas for the best groups to target (e.g., different classes, after-school groups, groups of elementary or middle school students, or parent or community groups).
- **Decide what form your presentation will take.** The format you choose for your presentation will depend on your audience, but here are some ideas:
 - Use visuals such as posters or bulletin boards.
 - Put on a skit.
 - Host a quiz show.
 - Have an interactive question and answer session with your audience.
 - Use a PowerPoint presentation to share your ideas more formally.
 - Be creative as you design your presentation, but make sure that you'll be able to include persuasive facts and useful tips on alternative transportation.

Project Guide continued on p.5

"Getting Around Town"

By participating in this activity, Club members will be able to explain the pros and cons of multiple types of transportation in Chicago, considering issues such as access, time, cost, and environmental impact.

Set up:

Club members will plan a trip to environmental landmarks in Chicago. They may choose their mode of transportation: walking, biking, taking a bus, driving a hybrid car, or driving a luxury SUV. Students will find out the impact of their transportation choices on greenhouse gas emissions, as well as the costs associated with different modes of transportation.

In advance, make one copy of each of the five transportation option information sheets found on p. 13-18 of this guide and on your CD. Cut each card out along the solid line, and stack them together by mode of transportation, face down (to hide the time, cost, and emissions).

As you "travel" around Chicago, refer to the map on page 4 (or use a classroom map) to give students a sense of how far they would be traveling in the city.

Activity:

1. Tell club members that they will be planning a trip to some of Chicago's environmental landmarks, and that they can choose whatever mode of transportation they want. Briefly review the options, and allow club members to choose. Multiple Club members can choose the same option (for example, you can form a "Walking Team," a "Bus Team," etc.). It is important that every transportation option be represented.

Continued on p. 3



“Getting Around Town” *continued*

2. Tell students that they are starting at the Rainbow Beach Dune in Rainbow Park, located at 3111 E 77th St on Lake Michigan. At this site nearly twenty years ago, dunes began to naturally form along the beach, and native species of plants began to colonize the area. The Rainbow Beach Dune natural area is now a protected restoration site where dune plants and animals have found a home.

First Leg

3. For the first part of the journey, club members will travel approximately 10 miles from Rainbow Beach Dune to Northerly Island, located at 1400 S Lynn White Drive, on the lake near downtown Chicago. Northerly Island is a nature area that includes spaces to walk, play, and fish.
4. Have students unfold their cards to reveal the time, cost, and greenhouse gas emissions that resulted from their mode of transportation on the first leg of the journey. Discuss what each category means, and what differences there were between modes of transportation.

Second Leg

5. For the second part of the trip, club members will travel just over 2 miles from Northerly Island to Millennium Park in downtown Chicago (201 E Randolph Street). Millennium Park is a 25-acre space with gardens, pathways, fountains, streams, and outdoor music venues.
6. Have students turn over their cards to reveal the time, cost, and greenhouse gas emissions for the second portion of their trip. Ask which students paid the most for the trip, and which paid the least. Were there any surprises?

Third Leg

7. For the third leg of the trip, club members will travel almost 9 miles from Millennium Park to the Columbus Park Lagoon and Woodland at 500 S Central Avenue. The lagoon at Columbus Park was designed to look like a natural river running through a prairie, and has waterfalls and many native fish and other aquatic species.
8. Have students unfold their cards to reveal the time, cost, and greenhouse gas emissions for the third portion of their trip. Ask which students had the highest CO₂ emissions. Ask whether any students had no CO₂ emissions.

Fourth (Final) Leg

9. For the final leg of the trip, club members will travel about 6 miles to the Kilbourn Park Organic Greenhouse at 3501 N Kilbourn Avenue. The Kilbourn Park Organic Greenhouse has environmental classes and workshops for youth, families, and adults.
10. Have students unfold their cards to reveal the time, cost, and greenhouse gas emissions for the final portion of their trip. How long did it take for each student to get from Columbus Lagoon to Kilbourn Park?

Continued on p. 4



“Getting Around Town” *continued*

This map shows all 5 of the sites your Club “visited.”

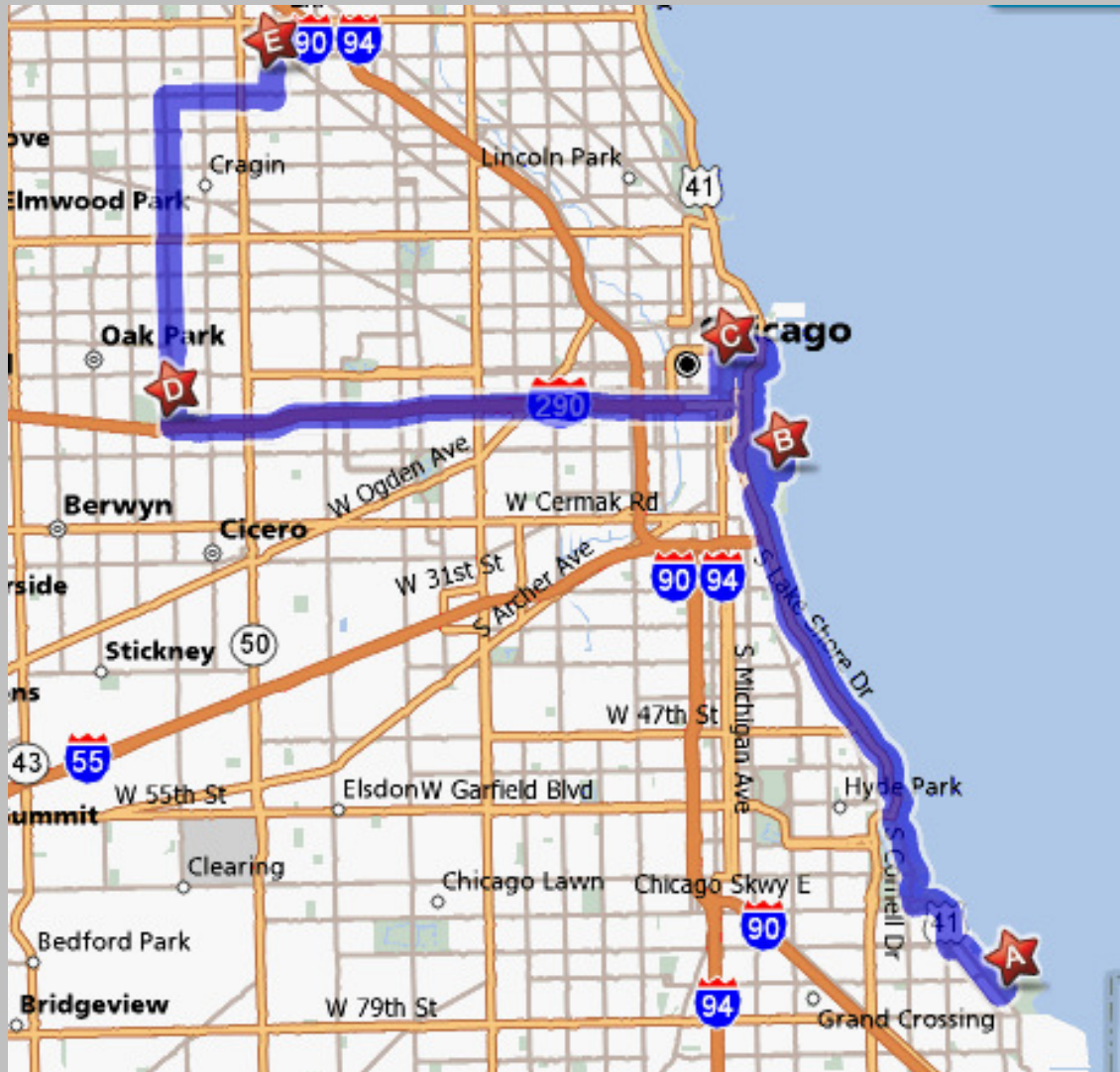
A = Rainbow Beach Dune in Rainbow Park located at 3111 E 77th Street

B = Northerly Island located at 1400 S. Lynn White Dr.

C = Millennium Park at 201 E Randolph

D = Columbus Park Lagoon at 500 S Central

E = Kilbourn Park Organic Greenhouse at 3501 N Kilbourn



End of the Journey

Discuss with students the total time, cost, and greenhouse gas emissions for each mode of transportation. See some possible questions for discussion on p.5.

Continued on p. 5

“Getting Around Town” *cont’d*

Whose trip took the most time? Just to travel to each of the sites (without stopping and enjoying any of them) would have taken over 8.5 hours if walking, over 2.5 hours by bus, a little over 2 hours by bike, and about an hour by car. Was walking impractical for any parts of the trip? The time estimates didn’t include the time it would take to find a parking space. Might this have added time to the car trips?

Whose trip cost the most (total costs were: walking and biking = \$0, bus = \$9, driving a hybrid car = \$15.03, driving an SUV = \$16.59)? If they had all started the day with \$20, who would have the most money left over? If they had started the day with \$10, would anyone have been unable to complete the trip? Many other costs were not included in this trip. For example, which modes of transportation would have to be purchased, and which wouldn’t? Which modes of transportation have other associated costs (e.g., insurance, upkeep, etc.)?

Who emitted the most greenhouse gasses?

Compare the total trip greenhouse gas emissions (walking and biking = none, bus = 4 pounds, hybrid car = 14.3 pounds, and SUV = 36.1 pounds). Which modes of transportation have the least impact on the environment? If you don’t have time to walk to a destination, what are other good alternatives that would have low greenhouse gas emissions?

If the students could choose again, would they pick a different mode of transportation for the trip? What would they do if they could travel together in the same vehicles or in a group? How much could they reduce CO₂ emissions per person by carpooling?

Want to go on a trip across the country?

Compare the environmental impact of different modes of transit at
http://www.nativeenergy.com/pages/travel_calculator/465.php

You can also compare driving prices at
<http://www.fuelcostcalculator.com/TripGasPrice.aspx>

3. **Create an outline for your presentation.** Listed below are some suggestions for topics to include in your presentation. For more information, see the **Student Fact Sheet**. Make concrete, manageable suggestions whenever possible!

- The benefits and costs of using cars. Benefits include convenience and privacy. Costs include air pollution, climate change, health concerns, and monetary costs.
- The benefits of taking public transportation.
- The benefits of bicycling and walking, as well as safety and bike repair tips.
- Ways to drive and maintain your car for maximum fuel efficiency.
- How to plan a trip using public transportation. Possible handouts could be Bike Trail Maps or CTA maps (see the first page for information on obtaining these).
- An additional interactive component. Perhaps you can have the audience brainstorm ideas, have the audience use the internet to plan a trip using CTA (www.transitchicago.com), or (if working with a specific class) have the students help you make additional campaign materials to share with other audiences.
- Pledges or another way to encourage the audience to commit to making changes in their lifestyles. For example, at the end of the presentation, you might ask each person to write down one way they plan to reduce the amount they drive. Ideas include biking or carpooling to work or school once a week, walking to the grocery store for small purchases, or combining errands in one car trip whenever possible.
 - Research shows that people are far more likely to make real changes if they are provided with concrete suggestions and asked to make a pledge, rather than if they are simply presented with information.
- Ways to follow-up with your audience. For example, you could ask audience members for their email addresses or home addresses, and send them more information about energy conservation after the presentation.



4. **Divide up the work among groups of club members.** Set deadlines for the work assigned to each group. Depending on your presentation, tasks might include some of the following:
 - Researching environmental, health and financial costs and benefits of driving a car, taking public transportation, biking and walking.
 - Researching bike and pedestrian safety tips and information about taking bicycles on trains and buses.
 - Researching how to drive and maintain your car for maximum efficiency.
 - Creating posters, props, PowerPoint slides, or other visuals.
 - Writing scripts.
 - Practicing public speaking.
5. **Work with groups** to make sure their work gets done and that the groups collaborate to create the final presentation.
6. **Practice** makes perfect!

Don't forget to take photos!



Give the Presentation

Show off what you've learned and created, and motivate your audience to change their behaviors!

Analysis and Follow-up – 1 meeting

Evaluate the success of your project. Here are some questions to discuss:

1. Did you achieve the goal of this project (to educate your classmates or community members about alternative transportation, and to inspire them to adopt more sustainable means of transportation)?
2. What environmental benefits do you think will result from your project? For example, what changes do you think your audience will make in their transportation habits as a result of your presentation?
3. What were the best parts of your presentation? How could your presentation be improved?
4. What were some of the greatest successes of your project? Some of your greatest challenges? How will you do things differently next time?
5. How can you follow up with your audience to encourage them to think about the environment?
6. How can you build on the efforts made by your Club during this project? Here are some ideas:
 - Make your presentation available to other audiences if possible.
 - Join Mayor Daley's Bicycling Ambassadors, Chicago's bike-safety and public-awareness outreach team. See www.bicyclingambassadors.org.
 - Request a bike rack <http://www.chicagobikes.org/forms/bikerackrequest.php> for in front of your school.
7. As a Club, review the C3 Air & Energy Audit Report questions and formulate answers. Submit your online report on or before **Friday, March 20th** (hard copy attached for your reference).





Student Fact Sheet

Alternative Driver's Ed

Chicago Conservation Corps (C3) Student Clubs
City of Chicago Department of Environment (DOE)



Why are transportation choices important?

Transportation and Air Quality:

- Highway vehicles are a major contributor to air pollution in the U.S., producing a large percentage of key chemicals that cause smog and health problems. Nation wide, vehicle emissions account for:
 - 63% of carbon monoxide (CO) pollution
 - 36% of nitrogen oxides (NOx) in the air
 - 29% hydrocarbons in the air
 - 10% of particulate matter emissions
- Air pollution from vehicles can cause respiratory problems, aggravate asthma, and increase the risk of a variety of other diseases, including lung cancer and leukemia.

Source: *The U.S. Environmental Protection Agency*
(<http://www.epa.gov/otaq/inventory/overview/pollutants/index.htm>)

Transportation and Global Climate Change:

- 5% of the world's population lives in the United States, but we produce almost 25% of the world's greenhouse gas emissions, which are responsible for global warming.
- Transportation is the largest source of carbon dioxide in America, the most prevalent greenhouse gas.
- Transportation is the fastest-growing source of greenhouse gas emissions. Emissions from vehicles increased by 24% between 1990 and 2003.

Source: *The U.S. Environmental Protection Agency*
(<http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsTransportation.html>)

Did You Know? Alternative Transportation in Chicago

The Chicago Transit Authority (CTA) is the nation's second largest public transportation system, providing more than 1.5 million rides every day.

The Metra train system serves 230 stations in Cook, DuPage, Lake, Will, McHenry and Kane counties.

The Chicago Department of Transportation (CDOT) has identified 425 miles of bicycle-friendly streets and paths in the city, including the 18-mile lakefront trail.

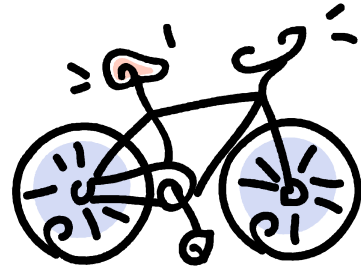
25% of Chicago's workers report taking public transportation. 16% of workers living in Cook County (including Chicago) take public transportation.

In accordance with the Chicago Climate Action Plan, Chicago will invest in transit improvements and boost Chicago's transit system ridership by 30% by the year 2020.

Sources: *The Chicago Tribune*, "Our Long Commute Just Gets Longer," August 30, 2006; the CTA, Metra, and DOT websites.



What Can You Do?



- For shorter trips, walk or ride your bicycle to work, home or school.
- For longer trips, take public transportation to get you to where you need to go.
- Start a carpool with classmates who live nearby – or a “walking school bus” for those who live close enough to walk to school.
- If your family only needs a car (or a second car) occasionally, look into joining a car sharing service. Check out www.igocars.org or www.zipcar.com for more information.
- When your family does need to drive, make sure to do it efficiently! Here are some ways to improve fuel efficiency:
 - If you are buying a new car, purchase a fuel efficient and low emissions vehicle.
 - Minimize use of your air conditioner and improve your fuel efficiency by up to 21% (Source: California DMV)
 - Drive the speed limit – every 5 mph faster that you drive over 60 mph, your fuel efficiency drops by 5%. (Source: U.S. Department of Energy)
 - Avoid idling your car for more than 30 seconds. Letting your vehicle idle for more than 30 seconds uses more gas than shutting it off and restarting. (Source: Natural Resources Canada)
 - Keep your tires inflated at the maximum recommended pressure (check once a month). If every American kept their tires properly inflated, we would save 1.2 billion gallons of gasoline. (Source: U.S. Government Accountability Office)
 - Keeping tires properly aligned also increases fuel efficiency (get your alignment checked every 5,000 miles). (Source: U.S. Department of Energy)
 - Get rid of the junk in the trunk! You can increase fuel efficiency by 1-2% for every 120 lbs of weight you remove from your car (Source: USA Today/Chrysler Corp)
 - Keep your engine tuned, use the manufacturer’s recommended motor oil and replace clogged air filters, which can reduce your gas mileage by as much as 10% (U.S. Department of Energy).





Opportunities for Research

Alternative Driver's Ed

Chicago Conservation Corps (C3) Student Clubs

City of Chicago Department of Environment (DOE)



After reading through the Student Fact Sheet, and playing the game, what specific questions do you still have about driving, biking, walking, and/or public transportation, and their relationship with the environment and human health? List those questions here:

Some of the resources listed on the following pages should help you get started in finding the answers to your questions. Don't forget to search the web on your own, visit the school or local library, and talk to your local alderman. You can also always send your toughest questions to the Department of Environment staff at conservation@cityofchicago.org. Good luck!

Public Transit

Chicago Transit Authority: <http://yourcta.com>

Find your way around Chicago by using the CTA's trip planner and system maps. You can also find information about the CTA's history, operations and service area, revenue, and other interesting facts.

Metra: <http://metrarail.com>

Find schedules, maps, and other logistical information, as well information about Metra's history and current operations.

Pace: <http://www.pacebus.com>

Pace serves 130,000 daily riders in the Chicagoland suburbs. Find out about riding Pace, as well as information about its history and operations. Be sure to check out Pace's Vanpool Program at <http://www.pacebus.com/sub/vanpool/default.asp>, which includes a "Costs of Driving" fact sheet.



Biking

Chicago Bicycle Federation: <http://www.biketraffic.org/>

Find bicycle shops and clubs, great deals, and upcoming bicycling events.

Chicago Bike Program: <http://www.chicagobikes.org>

Includes links to bike trail maps, information about bike safety, listings of bike shops, information about the benefits of biking, and more!

Walking & Carpooling Programs

Chicago Public Schools Student Transportation website:

<http://www.cps.k12.il.us/parent/transportation.html>

Check out the “Alternative Transportation” link under “Information for Parents.” You’ll find information about student bus fare rates and the Walking School bus program:

(<http://www.walkingschoolbus.org>).

Chicago Department of Transportation’s Pedestrian Program: <http://www.chicagowalks.org/>

Everything you ever wanted to know about walking in Chicago, including information about walking and health, pedestrian safety, safe routes to school, maps and tours, city programs, and pedestrian-friendly transportation options.

RideMatch 21 Carpools and Vanpools: <http://www.sharethedrive.org>

This Chicago Area Transportation Study (CATS) service matches people up with potential carpools. You can also find tips on carpooling at this website.

Transportation & Climate Change

Chicago Climate Action Plan

<http://www.chicagoclimateaction.org>

Click on the Chicago Climate Action Plan (left side), then on “Improved Transportation Options” to learn more about how Chicago plans to address climate change issues related to transportation.

EPA Websites on Transportation and Climate Change:

<http://epa.gov/climatechange/wycd/road.html>

<http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsTransportation.html>

Offers basic overviews of the relationship between transportation and climate change, and provide links to many useful EPA resources.

EPA’s Vehicle Emissions homepage:

<http://www.epa.gov/ebtpages/airmobilesourcesvehicleemissions.html>

Everything you could ever need to know about air pollution and vehicles.

Pew Center on Global Climate Change: <http://www.pewclimate.org/docUploads/ustransp.pdf>

A detailed report on how the U.S. can reduce greenhouse gas emissions from the transportation sector. The Pew Center’s website also offers information about other global climate change topics.

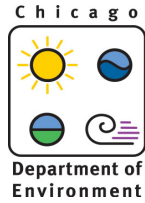
Travel Matters (<http://www.travelmatters.org/>).

An emissions calculator that allows you to calculate how much greenhouse gas you generate as a result of your transportation choices. The site also includes regional maps of carbon dioxide emissions for Chicago, San Francisco, and Los Angeles and tons of additional resources for teachers and students.

Fueleconomy.gov: <http://www.fueleconomy.gov/>

Put together by the US Environmental Protection Agency and Department of Energy, this website provides detailed profiles of vehicles’ fuel use and emissions. Also includes information about alternative fuel vehicles and driving efficiently.





Outline for Presentation
Alternative Driver's Education
Chicago Conservation Corps (C3) Student Clubs
 City of Chicago Department of Environment (DOE)



Format for Presentation (e.g., skit, PowerPoint, quiz show, etc.): _____

<p align="center">Outline for Presentation</p>	<p align="center">Tasks to Be Completed for Each Section</p>	<p align="center">Club Members Responsible for Each Section/Tasks</p>
<p>Example: Introduce Club Members, explain the purpose of our Chicago Conservation Corps (C3) Student Club, and the purpose of our presentation.</p>	<ol style="list-style-type: none"> 1. Make introduction slide. 2. Pick some interest-grabbing facts to explain the purpose of our presentation. 	<ol style="list-style-type: none"> 1. Kristen 2. Jeff

Turn page for more space for your outline!





Outline for Presentation (continued)
Alternative Driver's Education
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Outline for Presentation	Tasks to Be Completed for Each Section	Club Members Responsible for Each Section/Tasks

