LESSON PLAN

~Grades 11 & 12 Canadian and World Studies~

"Working With Motorists: An Idling Intervention Project"

-created by Lynn Perreault, Ph.D.
(for Idle-Free Windsor)

Date:	**Time:**
School:	**Teacher:**
Special Instructions: This is a one-week project. Over three of the five days, students are required to leave 10 to 15 minutes early from last class period and stay 10 to 15 minutes after school.	

Ontario Curriculum Connection

By the end of this course, students will:

Overall Expectations (Methods of Geographic Inquiry and Communication):

- Use the methods and tools of geographic inquiry to locate, gather, evaluate, and organize information about environmental and resource management issues and concerns.
- Analyze and interpret data gathered through research and investigation, using a variety of methods and geotechnologies.

Specific Expectations:

Research

- Gather geographic information from primary sources and secondary sources to research an environmental or resource management topic or issue.

Interpretation and Analysis

- Develop possible solutions to problems or issues related to the environment or resource management, using appropriate forecasting, decision-making, and/or problem-solving strategies.
- Provide appropriate and sufficient geographic evidence and well-reasoned arguments to support opinions and conclusions.

MATERIALS & EQUIPMENT

For students:

- Pen or pencil
- A watch

For the Project Leader (i.e., teacher or anti-idling project coordinator):

- Printouts of the following documents: '*Background*,' '*Idle-Free Windsor Project Overview*,' '*Idling Intervention Project Overview*,' '*Job Chart*,' '*Job Descriptions & Procedure*,' '*Idling Observation Form*,' '*Idling Observation Master Form*,' '*Calculations Sheet – Idling Observation Summary*,' '*Script for Approaching Motorists,' 'Commitment Intervention Form,'* '*Commitment Intervention Master Form*,' and '*Calculations Sheet – Commitment Intervention Summary*.'
- Transparencies of the following documents: '*Job Chart*,' '*Idling Observation Form*,' '*Script for Approaching Motorists*,' '*Commitment Intervention Form*,' '*Calculations Sheet – Idling Observation Summary,*' and '*Calculations Sheet – Commitment Intervention Summary.'*
- Photocopies of the following documents: *'Job Descriptions & Procedure*,' '*Idling Observation Form,*' '*Commitment Intervention Form,*' and '*Script for Approaching Motorists*' (enough for every Vehicle Officer).
- Idle-Free Windsor (IFW) print materials: 'Info Cards,' 'stickers' (i.e., vinyl windshield decals), 'bookmarks' and 'bumper stickers.' Call 519-973-1156 or 519-973-1116, or e-mail liaison@citizensenvironmentalliance.org for your free IFW print materials.

Vocabulary:
Words & concepts your class may be learning

Air pollution: Substances in the air that have harmful or unpleasant effects.
Carbon dioxide (CO_2): A colourless, odourless gas, one of the most important of the greenhouse gases and essential to plant life on Earth.
Climate change: Climate change is the change in average weather over time and over a region. It results from the greenhouse effect and will cause major disruptions in various ecosystems around the world.
Emission: The process of sending out.
Exhaust: Gases ejected from an engine as waste products.
Greenhouse effect: The insulating effect produced by gases in the Earth's atmosphere. It traps radiant heat and warms the planet.
Greenhouse gases: Any of the atmospheric gases that contribute to the greenhouse effect (for more information on the greenhouse effect and climate change, visit www.idlefreewindsor.org, click on Teaching Resources, then click on Background: Anti-Idling Issues).
Ground-level ozone: Formed by a reaction between nitrogen oxides and volatile organic compounds in the presence of sunlight. Levels have been greatly increased by human activities such as the burning of fossil fuels.
Idle or Idling: Inactive, not in use, not moving or in operation.
Smog: A discoloured haze that is a combination of airborne particles, gases, and chemicals (ground-level ozone) that together affect our health and our natural environment.
Vehicle: A machine or object that helps us get from one place to another.
Volatile organic compounds (VOCs): VOCs are a major cause of ground-level ozone as a result of their chemical reaction with sunlight. They come mainly from fuel combustion and from the evaporation of liquid fuels and solvents.
Vulnerable: Easily hurt or injured.

PROCEDURE

Part 1 (Introduction – Day 1)

Topic Intro - Assessing students' knowledge & explaining the Idling Intervention Project

During class ~ 35 min.

(Refer to the '*Background*' document to facilitate this introductory discussion.)

Ask students to list the various situations in which they sat in an idling vehicle (e.g., drive-thrus, waiting for someone). Ask: What are the dangers of vehicle exhaust emissions? (e.g., carbon monoxide poisoning, CO_2 affects climate change). Ask: What is climate change? Ask: How do greenhouse gases (e.g., CO_2) contribute to climate change? What are the health effects of vehicle idling?

Briefly explain the Idle-Free Windsor Project (see the '*Idle-Free Windsor Project Overview*' document).

Discuss how students will complete a class project over the next week. Outline the class project for the students (see the '*Idling Intervention Project Overview*' document).

Assist the students in finding a name for the overall class project (e.g., 'Assignment No-Idle' or 'Our Idle Reduction Campaign' or 'Helping the Environment One Car at a Time').

Part 2a (Data Collection – Day 2)

Idling Observation Activity

During class ~ 35 min.

Divide the classroom into teams of six (1 Team Leader and 5 Vehicle Officers). Show the '*Job Chart*' transparency. Assist each Project Team in finding a team name. Hand out job descriptions to all team members (see '*Job Descriptions and Procedure*' document). Make sure that Team Leaders receive the 'Team Leaders' job description, and that Vehicle Officers receive the 'Vehicle Officers' job description. Give students a few minutes to read over their responsibilities for the week.

For Vehicle Officers, explain how to identify an idling vehicle (i.e., look out for exhaust fumes; listen for the engine; look for vibration of the vehicle; smell of exhaust fumes; look for headlights being on). Explain how to fill out the '*Idling Observation Form*' by showing the transparency. For example, under 'Vehicle Description,' include the colour, make, and circle the type of vehicle – car, truck, mini-van, or SUV. Make sure to define each type of vehicle so that all team members clearly know the difference between them. Each Vehicle Officer will be assigned a number from 1 to 5 – they must only write in the corresponding row number. For example, Vehicle Officer #1 will only fill out row #1 of his or her '*Idling Observation Form*' and Vehicle Officer #4 will only fill out row #4 of his or her form. Give an

example of how a row should be filled out (based on the 'Vehicle Officer' job description found in the '*Job Descriptions and Procedure*' document). Make sure to go over every step listed under the "Idling Observation Stages' section of the 'Vehicle Officer' job description.

For Team Leaders, explain how they will assign a number to each Vehicle Officer on their team. Vehicle Officers will keep this number and use it throughout the week. Make sure to go over every step listed under the 'Idling Observation Stages' section of the 'Team Leader' job description.

Remind all students to bring a watch and a pen or pencil with them at the end of the school day in order to record their observations.

End of school day ~ 20 min.
At the end of the school day (approximately 10-15 min. before the end of last class), the Vehicle Officers and Team Leaders will meet outside the school where vehicles stop to pick up passengers. Give five '*Idling Observation Forms*' to each Team Leader (the Team Leaders will then distribute one form per Vehicle Officer). Remind Vehicle Officers that they must only write in the row number they were assigned earlier that day. Assign parked or stopped vehicles to each Team Leader (the Team Leaders will then assign one vehicle per Vehicle Officer). Make sure that each team is responsible for an equal number of vehicles. Team Leaders and Vehicle Officers will be responsible for the tasks listed in their respective job descriptions. Assist students when needed.

Immediately after the observation period (approximately 10-15 min. after last class), collect the '*Idling Observation Forms*' from each Team Leader. Using the '*Idling Observation Master Form*,' write out all of Team #1's information, including student names, vehicle descriptions, and all other observations made by each student on that team – do the same for all subsequent teams. Calculate the 'Duration of Idling' for each vehicle. Fill out the 'Name of School' and 'Weather' and 'Temperature' and 'Date' and 'Time at Start' and 'Time at Stop' sections on each team's '*Idling Observation Master Form*.'

Part 3 (Asking Motorists to Commit to Reduced Idling – Day 3)

Commitment Intervention Activity
During class ~ 35 min.
For Vehicle Officers, go through the steps listed in the 'Vehicle Officer' job description in the '*Job Descriptions and Procedure*' document (under Commitment Intervention Stage). Vehicle Officers will approach their assigned vehicle, knock on the window in a friendly manner, and begin reading the '*Script for Approaching Motorists*.' Provide students with plenty of time to practice using the script and the Idle-Free Windsor print materials (e.g., role-playing). Using the '*Commitment Intervention Form*' transparency, give an example of how a row should be filled out (based on the 'Vehicle Officer' job description found in the '*Job Descriptions and Procedure*' document).

For Team Leaders, go through the steps listed in the 'Team Leader' job description in the '*Job Descriptions and Procedure*' document (under Commitment Intervention Stage).

Remind all students to bring a watch and a pen or pencil with them at the end of the school day in order to record their observations.

End of school day ~ 20 min.
At the end of the school day (approximately 10-15 min. before the end of last class), the Vehicle Officers and Team Leaders will meet outside the school where vehicles stop to pick up passengers. Give five '*Commitment Intervention Forms*' and distribute Idle-Free Windsor print materials to each Team Leader (the Team Leaders will then distribute the materials to each Vehicle Officer). Remind Vehicle Officers that they must only write in the row number they were assigned the previous day. Assign parked or stopped vehicles to each Team Leader (the Team Leaders will then assign one vehicle per Vehicle Officer). Make sure that each team is responsible for an equal number of vehicles. Team Leaders and Vehicle Officers will be responsible for the tasks listed in their respective job descriptions. Assist students when needed.

Immediately after the observation period (approximately 10-15 min. after last class), collect the '*Commitment Intervention Forms*' from each Team Leader. Using the '*Commitment Intervention Master Form*,' write out all of Team #1's information, including student names, vehicle descriptions, and all other observations made by each student on that team – do the same for all subsequent teams. Fill out the 'Name of School' and 'Weather' and 'Temperature' and 'Date' and 'Time at Start' and 'Time at Stop' sections on each team's '*Commitment Intervention Master Form*.'

Based on each team's '*Commitment Intervention Master Form*,' fill out the '*Calculations Sheet – Commitment Intervention Summary*' to summarize the commitment intervention data that was collected.

Part 2b (Data Collection – Day 4)

Idling Observation Activity
During class ~ 35 min.
With the class, problem-solve any issues that may have arisen from the previous idling observations. Correct any problems so that the idling observations made on Day 4 will go more smoothly. Review the responsibilities students will have as they make their second set of idling observations later today.

Present the data found on the '*Calculations Sheet – Commitment Intervention Summary*' transparency. Congratulate the students on a job well done. Engage the students in a discussion about the commitment intervention activities. Ask: How receptive were the drivers? How easy/difficult was it to get drivers to commit to reduce their idling? How easily did drivers accept the print materials handed to them? How could the commitment intervention strategy be changed in order to make it more effective? What else could be done to encourage drivers to reduce unnecessary vehicle idling?

End of school day ~ 20 min.
Repeat the data collection activities listed for Day 2.

In addition to once again filling out an '*Idling Observation Master Form*' for each team, use the '*Calculations Sheet – Idling Observation Summary*' to calculate the difference between the observations made on Day 2 and Day 4. Refer to the '*Job Descriptions and Procedure*' document for the steps to take in preparation for the Discussion Stage.

Part 4 (Interpreting Data – Day 5)

Discussion Activity
During class ~ 35 min.
Lead the students in a discussion based on the project results (i.e., difference between the observations made on Day 2 and Day 4). Using the '*Calculations Sheet – Idling Observation Summary*' transparency, students will interpret the findings. Refer to the '*Job Descriptions and Procedure*' document for the steps to take in interpreting the findings during the Discussion Stage.

Congratulate all students on a job well done!

Please call 519-973-1156 or 519-973-1116, or e-mail liaison@citizensenvironmentalliance.org. Idle-Free Windsor staff would like to know about the results of your idling intervention.

For more information about Windsor's anti-idling campaign, please visit www.idlefreewindsor.org or call 519-973-1156. (After May 1, 2007, please call the Citizens Environment Alliance at 519-973-1116.)

ASSESSMENT TOOL

"Working with Motorists: An Idling Observation Project"

Teacher Name:

Student Name: _____

CATEGORY	4	3	2	1
Performance	The student knows his or her job tasks well. There is no need for notes and the student goes about his or her responsibilities (as Vehicle Officer or Team Leader) with confidence.	The student knows his or her job tasks pretty well. May need notes once or twice, but the student goes about his or her responsibilities with relative confidence.	The student knows some of his or her job tasks, but did not appear to have practiced. May need notes 3-4 times, and the student appears ill-at-ease.	The student could not engage in his or her responsibilities without using notes.
Understanding of Content	Student demonstrates a thorough understanding of the concepts, procedures, and methods taught by the Project Leader in order to effectively conduct the Idling Intervention Project. For example, the student consistently fills out all required forms correctly.	Student demonstrates a considerable understanding of the concepts, procedures, and methods taught by the Project Leader in order to effectively conduct the Idling Intervention Project. For example, the student fills out all required forms with very few errors.	Student demonstrates some understanding of the concepts, procedures, and methods taught by the Project Leader in order to effectively conduct the Idling Intervention Project. For example, the student only partially fills out the required forms or the forms contain a few errors.	Student demonstrates limited understanding of the concepts, procedures, and methods taught by the Project Leader in order to effectively conduct the Idling Intervention Project. For example, the student did not fill out the required forms or the forms contain many errors.
Use of Processing Skills (e.g., analyzing, drawing conclusions and discussing the final results – i.e., the difference between the idling observations made on Days 2 & 4)	The student uses processing skills with a high degree of effectiveness.	The student uses processing skills with considerable effectiveness.	The student uses processing skills with some effectiveness.	The student uses processing skills with limited effectiveness.