

Idle Off

Purpose:

To understand the environmental impact of leaving an engine idling.

Objective:

Students will sort out myth from truth on the topic of engine idling and transportation and compare and create guidelines for when to turn engine motors off.

Time: 20 minutes

Materials

- o Myth cards
- o Instruction card
- o True and false cards

Preparation:

- o Print, mount and laminate myth, instruction and true / false cards.

Procedure:

1. Choose one person in your group to be the reader, they will be reading the myth cards out loud.
2. Explain that it will be up to each person in the group to decide if the myth is true or false. If they believe it to be true, they stand next to the true card; if they believe the myth to be false, they should stand next to the false card. Have each participant keep track of their correct answers to see how well they did.
3. The reader should then read out one myth card at a time.
4. If you are finished early, try to come up with some guidelines or slogans to encourage people to turn their engines off.

Extension:

1. After school complete a survey of how many vehicles are idling their engines and for how long. Use the following information to create statistics around how much energy is wasted, how much money is wasted, and how much carbon dioxide is produced from vehicles idling around your school.
 - o Every 10 minutes of idling uses at least 0.1 litres of gasoline.
 - o Gas costs, on average, \$0.80 per litre.
 - o For every litre of gasoline consumed, the average car produces 2.4 kilograms of Carbon Dioxide.
2. Create your own myth cards around transportation or related issues.

Background Information - Idle Off

Turning off your engine when stopped for more than ten seconds is one of the simplest things you can do to reduce environmental pollution, minimize the health effects of vehicle exhaust, extend the life of your car and save money.

Idling and the Environment

Scientists believe that greenhouse gases, created in part by vehicle emissions, are building up in the Earth's atmosphere and causing heat to be trapped close to the Earth's surface – this is known as global warming. According to the Office of Energy Efficiency (OEE), Canadians "love affair with the car" has helped to place the transportation sector at the top of the list of sources for greenhouse gas emissions. Idling a vehicle for only ten minutes a day wastes approximately 100 litres of gasoline in a year and creates 240 kilograms of carbon dioxide, a major greenhouse gas. While this may not seem like a huge amount, the OEE points out that together our anti-idling efforts can make a big difference. If every driver of a light-duty vehicle in Canada avoided idling for just five minutes a day, we would prevent more than a million tonnes of carbon dioxide from going into the atmosphere. Furthermore, idling not only creates more exhaust than necessary, but the exhaust is more harmful because catalytic converters work most effectively at higher temperatures such as when the car is being driven. Besides carbon dioxide, vehicle exhaust also contains sulphur oxides, nitrogen oxides, acid aerosols and other particulate matter that contribute to a range of environmental effects such as acid rain and smog.

Idling and Health

Children, with their higher metabolism, are more vulnerable to the lack of oxygen that is caused by carbon monoxide, a component of vehicle exhaust (Toronto Star, February 21, 2004). In fact, one of the most common, and perhaps most dangerous idling scenarios is parents waiting for their children after school without being aware of the dangers that this poses for the health of the school children. Nicole Dakin from EKES (East Kootenay Environmental Society) notes that "Anti-idling...is especially important around school yards, as children's lungs are more sensitive than adults lungs to pollutants like sulphur oxides, nitrogen oxides, acid aerosols and particulate matter which are expelled from the combustion of gasoline, diesel gas...our noses and lungs are designed to filter the air we breathe, but particulate matter in exhaust is so small that our bodies can't protect us from lung damage." (Daily Bulletin, November 17, 2004). Making parents aware of the health risks posed by idling, particularly in school zones, is even more pressing than educating the general public.

Idling and your Car

Most Canadians run their car engines to warm them up before driving, particularly in cold weather, because they believe it is less harmful for the engine. This is not true! Today's fuel-injected engines only require thirty seconds of idling, even in very cold weather, to be ready to drive. The best way, and the fastest way, to warm the engine and the rest of the car is to drive it. In fact, idling may actually harm your car. When an engine idles, it is not working at its most efficient level and not all of the fuel is burned, leaving fuel residue to build up inside the engine that will eventually cause problems. Turning off and restarting the engine does not cause significant wear and tear on the car, and is a better alternative to idling the engine (Toronto Star, February 21, 2004). Turning off the car can not only reduce wear and tear, but it can save you money and help the environment. Idling for ten seconds uses more fuel than if the engine was turned off and restarted.

One way for Canadians to decrease their vehicle exhaust is to be aware of the myths surrounding idling and how often we idle. Letting others know of the importance of turning off a vehicle, or asking them to turn off their vehicle is an important way to spread the anti-idling message. The Office of Energy Efficiency also suggests that Canadians avoid using remote car starters which encourage idling and to consider getting a block heater to warm the engine in the cold winter months.

Idling Campaigns Across Canada

Attention to idling as a health and environmental issue is a growing concern in many Canadian cities. Anti-idling bylaws became one way to reduce the smog that plagues cities like Montreal and Toronto each summer. Montreal passed an anti-idling bylaw as early as 1986, followed by Toronto in 1998. These bylaws were difficult to enforce and were used primarily as a promotional tool to make people aware of how often they idle, particularly by the city of Toronto. (National Post, Dec.7 2002). In British Columbia the City of North Vancouver, followed by Vancouver, were the first municipalities to pass anti-idling bylaws, and in June of 2004 the Greater Vancouver Regional District endorsed a bylaw that would function as a model for all Lower Mainland municipalities to implement at their own discretion (South Delta Leader, August 13, 2004). On October 16, 2003, the federal government put anti-idling on the national agenda through the OEE's national promotional campaign which focussed on the trucking industry as well as private citizens. At gas stations across the country, truckers were encouraged not to idle their engines when stopping for a meal and when sleeping at night, particularly during the winter months when truckers typically leave their engines running around the clock. (Kamloops Daily News, October 16 2004). The OEE's campaign was also intended to raise awareness amongst all drivers and encouraged Canadians to turn off their engines when they idling any longer than ten seconds in a non-traffic situation, such as while waiting for someone, running a quick errand, or waiting at a train crossing.

For more information on idling and resources for idle off campaigns visit:

Better Environmentally Sound Transportation - www.best.bc.ca

Office of Energy Efficiency, Natural Resources Canada - www.oeenrncan.ca

Instructions

1. Choose one person in your group to be the reader, they will be reading the myth cards out loud.
2. Explain that it will be up to each person in the group to decide if the myth is true or false. If they believe it to be true, they stand next to the true card; if they believe the myth to be false, they should stand next to the false card. Have each participant keep track of their correct answers to see how well they did.
3. The reader should then read out one myth card at a time and have each person decide on their answer before revealing the correct one.
4. If you are finished early, try to come up with some guidelines or slogans to encourage people to turn their engines off.

Idle Off



False

Destination Conservation

Pacific Resource Conservation Society ©2005

Idle Off



True

Destination Conservation

Pacific Resource Conservation Society ©2005





There are over 13 million cars in
Canada

True!



Highways, roads and parking lots
cover nearly 50% of the surface area
of most North American Cities.

True!



I need to warm up my car by idling it
before driving.



Transportation is the largest
contributor to Canada's greenhouse
gas emissions.

False - your car warms up better and
faster by driving than idling, even in
extremely cold weather 30 seconds
is enough to get your car ready.

True - the personal use of cars,
sport-utility vehicles and light trucks
accounts for 55 per cent of Canada's
transportation emissions.



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It doesn't save much fuel to turn the car off when stopped.

False! - If every driver of a light-duty vehicle in Canada stopped idling for just 5 minutes a day, we would save 1.6 million litres of fuel worth more than \$1.2 million.



Globally, there is a new car on the road every second.

True!



Idling only happens for a few minutes.



Idling the car has no effect on the engine.

False! - A recent study showed that on an average summer day, the time spent idling by Canadians adds up to more than 46 million minutes.

False - idling causes fuel residues to build up that can contaminate engine oil and damage engine parts.



Idle Off

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One public bus can replace 40 cars
on the road.

True!

Walking, biking, using public
transportation, and carpooling are
all good ways to reduce vehicle
emissions in your area.

True!



Idle Off

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In the Lower Mainland 75% of air
pollution comes from vehicles.

True!

For every litre of gasoline used, the
average car produces 2.4 kilograms
of Carbon Dioxide, a greenhouse
gas.

True!



Idle Off

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Idling and vehicle emissions only
effect the environment.

False - airborne pollutants from
vehicles worsen asthma, impair lung
function and can even cause death.



Canadian cities don't have problems
with air quality.

False - in a recent report, all
examined Canadian cities had
average annual ozone levels above
the acceptable limit.



Idling only affects the environment
through greenhouse gases.

False - idling contributes to acid rain
(nitrogen oxides), smog (hydrocarbons
and ground level ozone), and the
greenhouse effect, as well as releasing
hazardous chemicals like benzene.



The average car is driven 15,000
kilometres per year in Canada.

True!



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