Stop and Go Green

When cars became popular in the early 1900s, they really changed the world. Not only was it easier to get from point A to point B, but cars also let people travel farther and more often. For a lot of us, cars are still the most common way we get around, but that easy travel comes with a price: greenhouse gas emissions and climate change.

For this Mission, we want you to "greenify" the way you and your family travel. First, you'll become an Eco Driving Expert and figure out how green the drivers in your home are. Then, you'll share tips that will help your family save gas and reduce their greenhouse gas emissions.

Your Mission: Become an Eco Driving Expert and help your family be clean and green when they travel!

To complete this Mission you must...

- Read through the Mission Brief to learn how driving can contribute to climate change
- Share our green driving tips with the drivers in your household and keep track of their green driving for a week
- When you're done, let us know how you did—and don't forget to share a picture of you doing your Mission so you can earn 20 points!

I Like to Move It, Move It!

When it comes to greenhouse gas emissions, transportation is a big problem. It's the second largest source of greenhouse gas emissions in Canada. In fact, transportation was responsible for almost 25% of all the greenhouse gas emissions released in 2017.

STOP AND GO GREEN

Over the years, vehicles have become more environmentally-friendly, releasing less greenhouse gas emissions into the air. However, with more vehicles traveling farther distances, we're still creating lots of pollution.

Climate Guardian Carey says: I can spot air pollution from anywhere. And cars are my big pet peeve when it comes to air pollution. Did you know that in addition to carbon, gas vehicles emit many other harmful pollutants into the air? These include nitrogen oxides (NOx), carbon monoxide (CO), Sulphur oxides (Sox), and other particulates. Join me in helping to flap this pollution out of the air by encouraging smarter driving habits and by going electric!

What's A Vehicle?

A machine that transports people or things from place to place, including cars, buses, trucks, airplanes, trains, and boats.

People on the go

More and more of us are choosing to drive instead of walking, biking, or taking public transit. In fact, in 2019, there were more than 24 million passenger cars and trucks on the road in Canada! More than 8 million of those passenger vehicles were travelling Ontario's roads, contributing about 35% of the province's carbon emissions. Unless we do something now, that number will keep on growing.

Charge it up

Did you know electric vehicles can get you around just like a regular car without releasing any harmful emissions into the air? Unlike regular vehicles, which need gas to run, electric vehicles, or EVs, need to be charged with electricity. Range, or the distance they can travel, can vary by model, but some EVs are getting close to driving as far as your typical gas car.

Ontario Power Generation (OPG) is helping to support EVs and giving drivers

more chances to charge their cars on the go using its clean electricity! Through the Ivy Charging Network, a partnership between OPG and Hydro One, fast-charging stations are being built all across the province to keep EVs moving. And the more EVs we can get on the road, the faster we can fight climate change.

Here's where you come in!

Climate Guardian Carey says: It's your job to help your family become more environmentally-friendly when they travel. Not only will this help you save gas and money, you'll also help cut back on your family's greenhouse gas emissions. In the battle against climate change, that's a great thing!

Over the next few pages, we'll give you some tips on being more environmentally-friendly when you drive. But first, you need to see how "green" the drivers in your family are in the first place by asking them to take the Eco Driving Test. Introducing today's expert: YOU!

What it means to be an Eco Driving Expert

As an Eco Driving Expert, it's your job to make sure the people in your household are traveling with the planet in mind. That means using less gas, keeping the car running efficiently, and when possible, leaving the car at home. This will cut down on your family's greenhouse gas emissions and help slow down climate change!

Here's what you need to do as an Eco Driving Expert:

Step 1: Find an adult who drives and ask them to take the Eco Driving Test.

Step 2: Give them the written test. When they're done, mark it using the answer key.

Step 3: Head out for the driving test. Use the driving test checklist to figure out how environmentally-friendly their driving is.

STOP AND GO GREEN

Step 4: Review the test results with them.

Step 5: Go through the Stop and Go Green tips on the next page to show them how they can improve their score.

Step 6: When that's all done, give them their Eco Driving License.

Take it to the next level

In a few weeks, try giving the Eco Driving Test to the test taker again and see if they have improved their score!

It's time to Stop and Go Green with these tips!

Use these tips to help you make greener choices when you travel.

Leave the car at home

Nothing will help you cut back on greenhouse gas emissions more than leaving your car at home.

- Try carpooling with a friend
- If the weather is nice, why not ride a bike to your destination?

Prepare before you go

Keep these tips in mind before you start your journey:

- In most cases, "warming up" your car for about 30 seconds should be enough, even in the winter. The engine will do most of its warming up when it's moving!
- Don't carry around any unnecessary weight. The heavier your car, the more gas it wastes, and the more emissions it creates.

STOP AND GO GREEN

- Remove roof racks if they aren't needed. They can cause wind resistance or friction, which can waste gas.
- Avoid driving when the roads are busy. Stop-and-go traffic uses more gas than cruising.
- If it's not busy and you have the choice between taking city streets and the highway, choose the highway because you won't have to stop as often.
- Combine errands into one trip to reduce your driving and save gas.

Keep your car in tip-top shape

It takes more gas to run a struggling engine than one that's working smoothly.

- Take your car to the mechanic to be serviced regularly to make sure your engine is running properly.
- Make sure your tires have the right amount of air in them. If they are too low, it uses more gas and wastes more energy when you drive. Try to measure your tire pressure once a month.
- Make sure you use the right oil and fuel for your car and for the season.

On the road

Changing the way you drive can make a big difference, so try some of these tips on the road:

- Accelerate gently so your engine has to work less and you can save more fuel.
- Go slowly. Most cars are more environmentally-friendly when they are traveling between 50 and 80 km/h. The faster you go over 80 km/h, the more fuel you use.

STOP AND GO GREEN

- Use your air conditioner sparingly. It uses up fuel trying to keep you cool.
- Try to keep a constant speed so you don't waste fuel speeding up and slowing down. Use cruise control when you can!
- Coast to slow down instead of braking, so your engine doesn't have to work as hard to slow down.
- If you're not in traffic and are going to be stopped for more than 10 seconds, turn off your car instead of letting it idle. Choose to go inside a restaurant instead of going through the drive-thru.

Is your family shopping for a new vehicle? Take a look at a hybrid or electric car to save even more fuel. Check your government's website to see if there are any deals or rebates you can get that will help you save money.

Want to help?

You probably already know that the way we get around can have a huge impact on our carbon footprint, but it's not just transporting us that's the problem: it's transporting all our stuff, too! Greenhouse gas emissions that came from things like cars, trucks, trains, planes, and boats accounted for almost 25% of global carbon dioxide emissions in 2016, and although many of us probably don't use boats and trains to get around very often, our stuff certainly does! In Canada, 1 of every 5 tonnes of greenhouse gas emissions come from transportation, which is why it's so important we do our part to shrink that number as much as we can.

Across the planet people everywhere are trying to cut back on their transportation emissions. Things like using clean fuels or electric vehicles and buying local goods that haven't had to travel as far to get to you can all make a big difference!

STOP AND GO GREEN

Case Study: Bamboo Bike Project

It can be hard to match the need to make things with the goal of keeping the emissions used to transport those things as low as possible, but something very exciting is happening in Ghana that does just that: the Bamboo Bike Project! Started in 2006, the Bamboo Bike Project was created to help people get around greener with zero emissions bamboo bikes – but they didn't stop there. By developing local production facilities, the Bamboo Bike Project also does its part to keep manufacturing close to home, which shrinks the distance these bikes need to travel to their final destination. Win win!

Sources:

https://www.wri.org/blog/2019/10/everything-you-need-know-about-fastest-growing-source-global-emissions-transport

https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/market-snapshots/2016/market-snapshot-increased-ghg-emissions-from-transportation-sector-reflect-major-consumer-business-trends.html#:~:text=GHG%20emissions%20from%20the%20transportation%20sector%2C%20the%20second%20largest%20emitter,of%20total%20Canadian%20GHG%20emissions

http://www.bamboobike.org/Home.html

Changing your driving habits can make a big difference!

In 2012, eight drivers were given mid-sized cars and challenged to make the trip from Halifax, Nova Scotia to Vancouver, BC using as little gas as possible. Each driver was taught fuel-efficient driving techniques like the ones in this brief before heading out on the road. When the competition was over, the winning team was able to make the entire cross-country journey on less than 5 tanks of gas, a trip that would normally take 50% more than that! Now, that's some impressive fuel savings!

STOP AND GO GREEN

The future is green and bright!

In this Mission Brief, we've talked about a bunch of the ways your family can reduce their greenhouse gas emissions when driving, but technology is being developed to help you cut back even more! Check out these technologies that are making a splash in the industry:

Stop-start engines

These are special engines that turn off when the car is stopped but keep the rest of the car running. When the driver is ready to move again, all they have to do is put their foot on the gas and the engine turns back on. With these engines, we can say goodbye to idling!

Hybrid cars

Instead of relying on a gas engine, a hybrid car uses a gas engine AND an electric motor. Greenhouse gas emissions are still produced when the gas engine is running, but they stop when the car switches to the electric motor, allowing drivers to reduce their emissions overall.

Electric cars

These cars run on electricity, not fuel. When the charge is low, the driver just plugs it in and waits for it to recharge.

In Ontario, OPG is using its clean electricity to help power electric cars in the province and reduce carbon emissions from transportation, helping to fight climate change.

Ontario is getting charged up!

Electric cars are taking the world by storm, but this isn't the only mode of transport getting electrified. More and more cities are thinking about making

the switch to electric buses to move people.

In Toronto, the city's Toronto Transit Commission is partnering up with OPG and Toronto Hydro to help electrify its entire bus fleet. This will be North America's largest transit electrification project to date.

Other cities, like Montréal, Edmonton, Guelph, and Vancouver, are also testing out electric buses for transportation. If everything goes well, these could be the first steps on the path to making the country's entire bus fleets electric.

Taking the bus is already a great way to reduce your carbon emissions. Some city buses can hold 115 people, which could mean 115 fewer cars on the road! By switching to electric, the cities can reduce their emissions even more!

https://www.pembina.org/blog/first-stop-electric-transit-buses-next-stop-clean-freight-sector

https://montreal.ctvnews.ca/the-first-of-montreal-s-new-long-range-electric-buses-has-arrived-1.4680074

Additional resources:

https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html

https://www.pembina.org/blog/three-takeaways-canadas-latest-greenhouse-gas-emissions-data

https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2310006701

https://www.nrcan.gc.ca/energy/efficiency/transportation/21038

https://www.fueleconomy.gov/feg/maintain.jsp

STOP AND GO GREEN

https://www.theglobeandmail.com/globe-drive/culture/commuting/20-ways-to-improve-your-cars-fuel-efficiency/article1379796/

https://www.nrcan.gc.ca/energy/efficiency/communities-infrastructure/transportation/cars-light-trucks/idling/4415

https://driving.ca/auto-news/news/how-it-works-starters-and-automatic-start-stop-technology

https://www.pembina.org/reports/powermyride-factsheet.pdf

https://www.pembina.org/reports/behind-the-wheel.pdf

https://www.theglobeandmail.com/globe-drive/culture/commuting/across-canada-on-four-tanks-of-gas/article4386735/

When you've completed this Mission, visit the website to download your next mission in Climate Guardians series.

HI, I'M CAREY