

20/20 THE WAY TO CLEAN AIR



The 20/20 Planner:

A booklet to help students and their families conserve energy to make our air cleaner and reduce climate change

STUDENT NAME

CLEAN AIR
BUDDY'S NAME



What is 20/20 The Way to Clean Air?

Is it a bird, is it a plane?

NO! It is a way to help keep the air clean.

Hello students! Welcome to 20/20 The Way to Clean Air - a program that helps you and your family reduce home energy use and vehicle use by 20%. Thanks for joining thousands of other students participating in 20/20 and helping to clean the air and reduce the impact of climate change. Are you up for the challenge?

When you participate in 20/20, you will become the teacher! Why teach? Mr. Joseph Joubert, who was a famous writer born in 1754, said that when you teach something, you really learn it twice. Over the next few weeks, you will teach your family about conserving energy and learn more about how energy use affects the air and our health. This booklet is full of activities and tips to do **at home** that will help your family become champions for clean air through two main sections:



Reducing home energy use by 20%

AND



Reducing vehicle use by **20%** too!

That is why we call this program 20/20 The Way to Clean Air!



How can you participate?

It's easy if you follow these simple steps:

- Choose someone at home who would be willing to be your student (call this person your Clean Air Buddy). Who will it be? Your Clean Air Buddy could be your mom or dad, an older brother or sister, or an adult friend.
- Take this booklet home and follow it page by page as you inspire and teach your Clean Air Buddy to learn more about energy conservation. Start by having your Buddy read the "Dear Clean Air Buddy" letter on the next page.
- Finally, talk together about what you have learned. Maybe there are things that you would like to learn about in the future? Continue your learning together as you move towards the way to clean air.
- Visit www.cleanairpartnership.org/2020 to complete the online pledge form and greenhouse gas calculator and have your actions added to thousands of other 20/20 participants' actions. Together we can make a difference and as an added bonus you will be automatically entered into the 20/20 prize draw.

Is there any on-line support? Yes! A special PowerPoint slide show has been created to help you and your Clean Air Buddy. If you have a computer and Internet access, you can go to www.cleanairpartnership.org/2020 and download the program. It appears just like a slide show, but with spoken words, so be sure to have a set of speakers handy. If you don't have a computer, that's okay too. Just read through this booklet and have fun.





(Students, please show this letter to your Clean Air Buddy at home)

Dear Clean Air Buddy:

"Unless someone like you cares a whole awful lot,
Nothing is going to get better. It's not."
— Dr. Seuss

This quote is from a children's story written by Dr. Seuss called "The Lorax". The Lorax, who is the main character of the story, inspired people to stop polluting and start protecting the environment. 20/20 The Way to Clean Air is a program that inspires and helps families to protect the environment by helping them to reduce air pollution, which is good for our health. It does this by teaching them how to reduce home energy use and vehicle use by... you guessed it... 20 percent!

Will you care a whole awful lot? The first step to improving our air is to participate in 20/20 as a partner in a young person's learning. As a partner, you will come to be known as a "Clean Air Buddy".

Why participate? Not only will you reduce energy use and save money, but you will be able to spend meaningful time with _______ as you work together to make the air cleaner in your neighbourhood and beyond. 20/20 has something for everyone. There are lots of actions you can do whether you live in an apartment or a house.

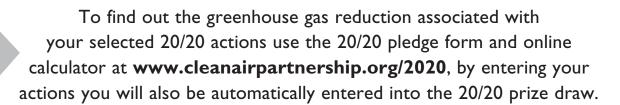
Who is involved? 20/20 comes to you from the Clean Air Partnership who is working in partnership with Greater Toronto Area and other Ontario region health units, school boards, and the EcoSchools program.

Things can get better when someone like you cares a whole lot! Have fun!



What is inside of this 20/20 Planner?

	Home Energy Planner (Helps you reduce home energy use by 20%)						
	Page	Activity	Learn about				
savore, quiz		Home energy savers' quiz	Energy use in your house, apartment or condominium				
n One:	5	Home energy savers' checklist Part I	Saving energy (and money) for two weeks (After two weeks, send this checklist back to the teacher or complete it online at www.cleanairpartnership.org/2020)				
Section	7	Home energy savers' checklist Part 2	Saving energy (and money) beyond two weeks				
S	9	Apartment (or condo) - energy savers' checklist	Saving energy in your whole building (This activity is for families who live in apartments or condos)				



Transportation Planner for students whose Buddies drive a vehicle. (Helps you reduce the amount you drive by 20%) **Page** Activity Learn about... Getting around using cleaner ways of commuting Leave your car at home 10 Section Two: **Emissions be gone!** Reducing tailpipe pollution How far do you go? Estimating how much you drive in a week 12 Clean the air 13 Reducing your driving for two weeks (After two weeks, send this checklist back to the teacher or complete it online at www.cleanairpartnership.org/2020)

For students whose Clean Air Buddies live in a house, apartment or condominium



Home energy savers' quiz

Does your air conditioner use a lot of electricity? Is it good to light your home with regular lightbulbs? Would a newer furnace help reduce your energy bill? The answers to these and more energy saving questions can help you reduce your home energy use.

But before we give you the answers, we want you to have some fun! Students, challenge your Clean Air Buddy with the following questions. Place an in the box which corresponds to your answer. Then, check your answers on pages 15 and 16. Good luck!

	Statement	True	False
I	Using fans can reduce your air conditioner (A/C) use by half.		
2	Wrapping your windows with plastic does not do anything to prevent the heat from escaping your home in the winter.		
3	Compact fluorescent light bulbs (CFLs) use more energy than regular light bulbs.		
4	You can reduce your home energy use by 20% by replacing an old furnace with a high-efficiency one.		
5	Sealing your home too tightly can cause indoor air problems that could affect your health.		
6	Laundry soaps will only work in hot water.		
7	Turning down your thermostat by 2°C in the winter can save you up to 3% of your heating costs.		
8	Installing a low-flow showerhead could save you up to \$1,400 in energy costs over five years.		
9	In 2008, air pollution contributed to 9,500 early deaths and over 16,000 hospital admissions in Ontario.		
10	A tap that leaks one drop of water per second can fill 724 glasses of water in one week.		



Home energy savers' checklist - Part 1

How can you save energy (and money) for two weeks?

Check off some or all of the activities listed below and try them for two weeks. Students, after two weeks, fill in the back of this checklist and return it to your teacher or fill it in online at:

www.cleanairpartnership.org/2020. If you and your Buddy do everything on the list, you will reduce your home energy use by 5%, which saves money and

on the list, you will reduce your home energy use by 5%, which saves money and helps the environment. So be sure to keep up with your activities even after two weeks!

WILL DO THIS FOR 2 WEEKS	ALREADY DO THIS	Energy Saving Activity
6	\circ	Example - Set thermostat (for heating) down etc.
\circ	0	Set thermostat (for heating) down I°C during the day and/or 2°C at night
\circ	\circ	Set thermostat (for cooling) up 1°C during the day and/or 2°C at night
0	0	To keep the heat in (during winter), close window coverings each night and open for the daylight hours on sunny days
0	0	To keep the cool air in (during summer), close window coverings for the daylight hours on sunny days
\circ	\circ	Clean or replace your furnace filter (should be done every two months)
\circ	\circ	Use cold water instead of hot water to wash your clothes
0	0	Reduce the number of drying cycles by half (by hanging your clothes or making sure your dryer is full)
0	0	Keep all air vents and doors to unused rooms closed when your furnace or air conditioner is on
0	0	Clean the coils on the back of your refrigerator by brushing off or vacuuming the dust
0	0	Use your dishwasher only when full; use the energy-saving or light wash cycle; choose the air dry option
0	0	Turn off lights, computers, TVs and DVDs; to reduce "phantom" or "stand-by" power use, plug electrical items into a power bar and switch it off when you aren't using them
0	0	Close the fireplace damper or air-tight fireplace door after you use your fireplace





Home energy savers' feedback form

Students! Please fill out this page with your Clean Air Buddy, cut it out, and bring it to your teacher.

Your teacher will then mail this form to: 20/20 The Way to Clean Air / Clean Air Partnership / 75 Elizabeth Street / Toronto, Ontario M5G IP4

Hel	p Us	To Lea	ırn						
	Let us know if you have completed Part I (page 5) and whether you plan to complete Part 2 (pages 7 and 8) by checking off one of the choices below:								
O	We ha	ve complet	ced Part I	but <u>WILL NC</u>	<u>OT</u> be d	oing Part	2.		
0	We have completed Part I and <u>WILL</u> be participating in Part 2 later on. By doing so, we will help conserve even more energy (like thousands of other 20/20 participants!) by trying to reach 20% reduction in home energy use.								
Stude	ent name								
Schoo	ol								
Grad	е		Teacher						
• • • • • • •	.	Touch	i ould like to	send you pro	ogram u	ıpdates an	d measure	how your	
		•		ir quality in y	•	•		, , , , , , , , , , , , , , , , , , , ,	
O	We	give 20/20) permiss	ion to conta	act us.				
Name	e of bud	dy, parent c	or guardian						
Addr	ess					City/town			
Posta	l code				Phone	()		
E-mai	İ								
	PLEASE PRINT CLEARLY								





We do not wish to be contacted further by 20/20.



Home energy savers' checklist – Part 2

Are there more ways to save energy (and money)?

Yes! Make a plan to complete this checklist over time and enjoy getting closer to 20% in energy savings. Complete the 20/20 pledge form online at **www.cleanairpartnership.org/2020** and it will automatically provide the total greenhouse gas reductions associated with your actions. You will also be automatically entered into the random draw for 20/20 prizes.

		Column I		
Energy Saving Activity	WILL DO THIS	ALREADY DO THIS	ENERGY REDUCTION	
Stuff you do everyday (Part I actions) Continue with the easy-to-do checklist from Part I on page 5 Turn it up, turn it down (heating and cooling)	О	О	5%	
 Set thermostat for heating down: (select one) By 2°C 24 hours a day By 2°C at night only By 2°C during the day and 3°C at night 	0	0	6% 2% 8%	
 Set thermostat for cooling up: (select one) By 2°C higher 24 hours a day By 4°C higher at night only By 2°C higher during the day and 4°C at night 	0	0	1% 1% 2%	
Use fans to reduce air conditioner use by half	0	0	2%	
 Stop the drafts! Seal and weather-strip doors and windows Cover windows and unused doors with plastic sheeting Put special foam liners into electrical outlets and light switches, and insert childproof plugs in the same outlet (especially on outside walls) 	0	О	10%	
Upgrade attic insulation to R40 (about a foot in depth)	O	0	5%	
Upgrade basement insulation to R-18	О	0	10%	
Install energy-saving windows throughout your house	0	0	3%	
Permanently seal an unused fireplace	О	0	3%	
Don't get steamed (heating water) Lower hot water tank temperature by 5°C and aim for the ideal energy savings temperature of 49°C (run hot water from your tap onto a meat thermometer to figure out the temperature.) Note: Do not turn your hot water heater down it if is electric. With this type of heater, the water is warmed unevenly and may allow bacteria to grow.	O	O	3%	

Home energy savers' checklist - Part 2

		Column I		
Energy Saving Activity	WILL DO THIS	ALREADY DO THIS	ENERGY REDUCTION	
Don't get steamed (heating water), CONTINUED Place insulation around at least the first meter of water pipes attached to your hot water heater	0	0	1%	
Install a low-flow showerhead and tap aerators	О	0	3%	
Repair leaky taps and showerheads throughout your house	0	0	2%	
You light up my life (lighting) Replace regular light bulbs with energy-efficient bulbs Replace 2 bulbs Replace 4 bulbs Replace 6 bulbs Note: Do not use in outdoor or dimmer light fixtures.	0	000	1% 2% 3%	
Replace outside lights with motion detecting lights	О	0	1%	
Install timers for outdoor lights	0	0	1%	
Too many machines! (appliances) Stop the use of a second refrigerator	О	О	3%	
Stop the use of a stand alone freezer	0	0	1%	
Replace low-efficiency furnace with high-efficiency Energy Star furnace	О	О	20%	
Install a tankless or solar hot water heater	О	0	10%	
Replace an old refrigerator with an efficient Energy Star model	0	0	3%	
Splish splash (swimming pools) Turn down your pool heater thermostat By 1°C By 2°C By 3°C	0	0	7% 14% 20%	
Use a solar blanket to cover your swimming pool for each night of the summer season when the outside air temperature is cooler than the pool water	О	О	20%	





Apartment (or condo) energy savers' checklist

You can help save energy in your whole building!

Students, even if your Buddy does not pay the energy bills, conserving energy is still important because it helps reduce air pollution. Also, do you think that rent and condo fees might be lower when you use less energy? Complete this checklist with your Buddy and see how many check marks you can get under "yes"!

	Will you and your buddy	Yes	We will soon
ı	Recognize how important it is to reduce home energy use in your apartment or condominium?		
2	Choose some of the activities listed in the home energy savers' checklist – Part I on page 5? (If you choose to continue with Part 2, you will also find some activities that you can do in an apartment or condo.)		
3	Look for the ENERGY STAR® symbol when buying household items that use electricity (such as light bulbs, computers and air conditioners)?		
4	Contact Eneract for a Smart Living workshop? They offer simple low-cost actions that can lower energy use in your unit and building. Call: 416-488-3966 or go to www.eneract.org.		
5	Talk to your landlord or property manager about saving energy? They can make a big difference by fixing leaky taps and closing off vents in rooms that don't need to be heated. They can also save more by having a building-wide energy inspection done.		

For students whose Clean Air Buddies drive a vehicle



Leave your car at home

Get around using cleaner ways of commuting

Smog! Traffic jams! Rising gas prices! No room to bicycle! How many more reasons do we need to reduce the amount that we drive? A lot of the air pollution in Southern Ontario comes from cars and trucks.

Students, can your Buddy use any of the cleaner choices listed in the chart below, instead of their car? Work with your Buddy to complete the following chart.

Cleaner Choice	Yes	No	Tell us Why
Public Transit (Bus, streetcar or subway)			
Walk or Bike (Great exercise!)			
Telework (Work from home)			
Carpool (Share a ride to work, school or events)			
Trip Chain (Combine errands into one trip rather than making several separate car trips)			

Did you know?

The World Health Organization recommends that you walk up to 5 km (about 50 minutes) a day for good health.





Emissions be gone!

Reduce tailpipe pollution

To reach a 20% reduction in vehicle use, your Clean Air Buddy will need to take public transit, walk, cycle, and carpool more often. But when they need to use a car, there are simple ways to reduce harmful tailpipe pollution. Complete this checklist with your Buddy.

	Yes	We will soon
Are the vehicle tires properly inflated? Keep tires inflated all year round and save as much money as what you would spend for two weeks of gas! Check tire pressure at least twice a month and add air when needed. Visit www.betiresmart.ca for information on how to check tire pressure.		
Is the engine properly tuned? An engine that is not taken care of creates more pollution and costs more money in repairs. Have your mechanic tune up your vehicle according to the maintenance schedule or once a year.		
Does the driver take time speeding up and slowing down? Quick starts and stops waste fuel and put "wear and tear" on your vehicle.		
Do you have an energy-efficient vehicle? Larger cars and engines often burn more fuel and cost more money to run. When shopping around for a new car, be sure to consider the smaller, energy-efficient ones.		
Is the driver careful about not idling? Idling is when the engine is on, but the car isn't moving. Idling wastes gas, and creates air pollution and greenhouse gases that lead to climate change. More and more municipalities in Ontario are adopting Anti-Idling by-laws that make idling a finable offence, much like illegal parking.		



How far do you go?

Students, complete this chart with your Buddy to estimate how far they travel each week. (If you want to find out the exact number of kilometres, go to http://ca.maps.yahoo.com)

Event	Location	Estimated Driving Distance (km)	Can We Reduce? How?
Example: Grocery Store Visit	No Frills	8 km	Yes – there is another grocery store closer.
Travel to school			
Travel to daycare			
Travel to work			
Kid's activities – after school or on the weekend			
Movie theatre/ entertainment			
Visit to a mall			
Trips on the week-end			
Grocery store			
Other:			
Total the number travelled	of kilometres I in one week		

Here is a challenge!

How much carbon dioxide do you think comes out of the tailpipe when one litre of gas is burned in an average car? (One litre of gas weighs .75 kg) When you have an answer, check with your teacher, he/she has the answer in the Teacher's Guide.



Clean the air

Reduce your driving for two weeks

Students, help your Buddy make a plan to reduce driving by following the steps below. Then, wish your Buddy GOOD LUCK when putting this plan into action for two weeks. **After** two weeks, fill in the back of this page, cut it out and bring it to your teacher or fill it out online at www.cleanairpartnership.org/2020.

STEP	Calculate	your	20%	reduction	target

km

Total number of kilometres driven in the past week. (Use your estimate from page 12)	20% reduction	Your weekly kilometre reduction target
km	x .20	= km

STEP 2 Take your weekly kilometre reduction **TARGET NUMBER** and put in into one (or more) of the driving destinations listed in the boxes below. Try this plan for two weeks!

Destination I

\cup	and/or other activ	•		
We will reduce driving to this destination each week by:				
0	Taking public transit	km		
O	Carpooling	km		
O	Cycling or walking	km		

Destination 2

We will reduce driving to this destination each week by:

C	Taking public transit	km
C	Carpooling	km

O Cycling or walkingD Teleworking/teleconferencingL km

TOTAL REDUCTION km

Destination 3

TOTAL REDUCTION

Shopping, running errands, going out for entertainment

We will reduce driving to this destination each week by:

~	-	1.11			
\circ	Taking	public	transit	kr	n

O Carpooling ____ km

O Cycling or walking ____ km

O Trip chaining ____ km

TOTAL REDUCTION km

Destination 4

O Taking weekend trips (visiting out of town / local holidays)

We will reduce driving to this destination each week by:

O Taking bus or train ____ km

O Carpooling ____ km

TOTAL REDUCTION ____ km



PLEASE PRINT CLEARLY

Reduce your driving feedback form

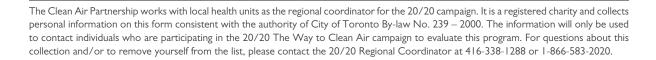
Students! Please fill out this page with your Clean Air Buddy, cut it out, and bring it to your teacher. Be sure to encourage your Buddy to reduce driving all year round and try a different plan for each season. The warmer months are great for biking or walking, while carpooling and public transit may make more sense in the cooler months.

Your teacher will then mail this form to: 20/20 The Way to Clean Air / Clean Air Partnership / 75 Elizabeth Street / Toronto, Ontario M5G IP4 or the forms can be submitted online at www.cleanairpartnership.org/2020

or the forms can be submitted online at www.cleanairpartnership.org/2020					
Help Us	To Learn				
-	ur Buddy succeeded in reducing driving and whether they plan to continue all Check off one of the choices below:				
O We re	We reduced driving for two weeks but <u>WILL NOT</u> be continuing. OR				
By doir	We reduced driving for two weeks and <u>WILL</u> continue to reduce driving all year round. By doing so, we will help improve our air even more (like thousands of other 20/20 participants!) by trying to reduce our vehicle use by 20%.				
Student name					
School					
Grade	Teacher				
Keep In	Touch				
•	rogram would like to send you program updates and measure how your helped to improve air quality in your community.				
O We	give 20/20 permission to contact us.				
Name of bud	dy, parent or guardian				
Address	City/town				
Postal code	Phone ()				
E-mail					



%



We do not wish to be contacted further by 20/20.

Home energy savers' answer key and more!

Using fans can reduce your air conditioner (A/C) use by half.

TRUE

Fans blow cool air around so you don't need to use as much A/C. You can also reduce your A/C use (plus receive \$25.00) by signing up with the Every Kilowatt Counts peaksaver program. Call your local electricity company or visit www.everykilowattcounts.ca/residential/peaksaver for more information or to register. Trees can also cool your home – plant deciduous (trees that lose their leaves in the fall) on your home's south area and coniferous (evergreen trees) on your home's north area.

2 Wrapping your windows with plastic does not do anything to prevent the heat from escaping your home in the winter.

FALSE

25% of the heat in your home is lost through the windows. Wrapping your windows with plastic is a low-cost option that can reduce this heat loss by half. When you are ready to change your old windows, be sure to look for windows and contractors certified by the Window Wise program. Call 1-800-813-9616 or go to www.windowwise.com. Did you know that older homes lose 30% of heat through cracks around doors and windows? That is like living with a basketball-sized hole in your home! Sealing the cracks can save you up to 10% on your heating bill.

3 Compact fluorescent light bulbs (CFLs) use more energy than regular light bulbs.

FALSE

CFLs use a lot less energy and last much longer. Regular light bulbs last about six months but CFLs can last for over six years! Green power, such as wind, water, and the sun, generates electricity with little or no air pollution. Contact your local energy supplier, or Bullfrog Power, to find out about switching to green power. Call 1-877-360-3464 or go to www.bullfrogpower.com.

4 You can reduce your home energy use by 20% by replacing an old furnace with a high-efficiency one.

TRUE

The average old, low-efficiency furnace wastes as much as 45% of the heat it produces. That is nearly half of the heat! When you decide to replace your furnace, be sure to check with your local energy supplier for cash incentives. Contact the Province of Ontario's Home Energy Audit program (www.homeenergyontario.ca or call I-888-668-4636) and the Government of Canada's ecEnergy program (www.ecoaction.gc.ca or call I-800-622-6232) for more ways to get cash back by improving home energy efficiency.



5 Sealing your home too tightly can cause indoor air problems that could affect your health.

TRUE

It is good to block the drafts to save energy, but sealing a home too tightly can make the indoor air unhealthy to breathe. You can prevent this by having a home energy audit done first to learn about proper ways to stop drafts, save money and improve home comfort. Call Windfall Ecology Centre at 416-465-6333 or go to www.windfallcentre.ca or visit www. cleanairpartnership.org/2020 for a listing of all qualified auditors in your area.

6 Laundry soaps will only work in hot water.

FALSE

Laundry soaps are now made to clean clothes in cold water. This makes it easier for you to reduce your hot water use, save money, and reduce air pollution.

7 Turning down your thermostat by 2°C in the winter can save you up to 3% of your heating costs.

FALSE

Turning down your thermostat by 2°C in the winter can save you up to 6% on heating costs while reducing harmful emissions to the air. Consider getting a programmable thermostat. It does the work for you by turning down your furnace when you aren't at home, or when you go to bed.

8 Installing a low-flow shower-head could save you up to \$1,400 in energy costs over five years.

TRUE

The hot water that many of us take for granted can account for as much as 25% of your home's total energy costs. A low-flow showerhead can reduce water use by half, or even more, without sacrificing the "feel" of the shower. Visit www.cleanirpartnership.org/2020 to see if your local municipality has any rebates for water saving devices.

9 In 2008, air pollution contributed to 9,500 early deaths and over 16,000 hospital admissions in Ontario.*

TRUE

And it is often the people with breathing and heart problems who become the most sick from air pollution. If you live in the GTA check the Air Quality Health Index www.airhealth.ca to learn when the air is best for outdoor activities. For air quality conditions across Ontario visit www.airqualityontario.com. Walk, bike or take public transit to reduce air pollution.

A tap that leaks one drop of water per second can fill 724 glasses of water in one week.

TRUE

Wasting this much water costs you \$420.00 a year so be sure to fix those leaks!

*Ontario Medical Association, Illness Costs of Air Pollution www.oma.org



Air Pollution, Climate Change and Your Health

Be Part of the Solution

Every time we drive our vehicles and use energy in our homes, we are burning fossil fuels – such as gas, oil and coal – and sending pollution and greenhouse gases into the air. This contributes to smog and climate change.

Climate change and smog are closely related. Greenhouse gases (like carbon dioxide) build up in the atmosphere and trap the sun's heat close to the earth, increasing global warming and climate change. Since heat and sunlight help to create smog, global warming could increase the number of smog days, leading to serious health issues for people with heart or breathing problems. Even for healthy people, air pollution can reduce lung function and irritate the eyes, nose and throat.

You can take action today to protect your health and improve air quality in your community. Join thousands of others participating in 20/20 The Way to Clean Air and become part of the solution to air pollution. If you live in the Greater Toronto Area check out the Air Quality Health Index at www.airhealth.ca and learn how to protect your health from air pollution as you plan your outdoor activities. For air quality conditions across Ontario visit www.airqualityontario.com.

Did you know?

The Air Quality Health Index is a tool that measures air quality in relation to your health on a scale from 1 to 10. A reading of 1 means a low risk and 7 or greater represents a high risk. This index can help you find out when the air is healthy to play outside. Hourly conditions and forecasts can be found at: www.airhealth.ca.





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