

20/20 THE WAY TO CLEAN AIR

A campaign to help students and their families reduce energy use, improve air quality and reduce the risk of climate change



Teacher's Guide:

A guide to help educators teach
20/20 activities to their students

Congratulations on your decision to participate in 20/20 The Way to Clean Air!

20/20 The Way to Clean Air is a campaign to help students and their families conserve energy to help improve air quality and reduce the risk of climate change. 20/20 provides hands-on activities to help families **reduce home energy use by 20% and vehicle use by 20%** - hence the name “20/20”. It comes to you from local public health units across Ontario, the Clean Air Partnership and the province-wide EcoSchools program. 20/20 actions support the energy conservation goals of EcoSchools. When classrooms in your school participate in 20/20, your school can earn points toward certification. (For more information, please visit www.ecoschools.ca).

This Teacher’s Guide has been developed in response to feedback from teachers who have participated in 20/20 in the past. You may choose to participate in 20/20 in a variety of ways that range from full participation to a hands-off approach. No teacher will approach this program the same way - some will feel comfortable using their own program delivery methods and may only use parts of this guide.

In the end, we hope that 20/20 resources will help you enjoy guiding your students and their families through a variety of fun activities that reduce energy use and create healthier communities.

DID YOU KNOW?

The Air Quality Health Index is a tool that reports health risk associated with local air quality on a scale from 1 to 10. A reading of 1 means a low health risk and 7 or greater represents a high health risk. This index can help you and your students decide when to enjoy physical activity outdoors and when to reduce or reschedule your activities. Hourly conditions and forecasts can be found at: www.airhealth.ca.



20/20 The Way to Clean Air
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Web site: www.toronto.ca/health/2020

What does 20/20 offer teachers, students, and their families?

FREE 20/20 PLANNERS FOR STUDENTS

Featuring a **two-week “at home”** program, the 20/20 Planner walks students and their families through two action plans for conserving energy: the first reduces home energy use by 20% and the second reduces vehicle use by 20%. You may decide to have your students do only one section, depending on your teaching goals. The 20/20 Planner has easy-to-use checklists that students complete with a pre-selected adult at home, called their “Clean Air Buddy”. The exercises encourage students to become their Buddy’s teacher as they apply at home what they have learned in class.

CONNECTIONS TO CURRICULUM AND ENVIRONMENTAL EVENTS

Grade 5 teachers can integrate the 20/20 program with their science unit on energy conservation. Other grades may want to link it to Walk to School week in October, Earth Week in April or Clean Air Day in June. 20/20 is appropriate for grade 4/5 and 5/6 split classrooms. Any grade, however, is welcome to participate since everyone benefits from cleaner air and better health.

POSTERS FOR THE CLASSROOM AND STICKERS FOR STUDENTS

These fun, colourful posters and stickers will help celebrate your students’ achievements.

ONLINE PRESENTATION WITH AUDIO TO INTRODUCE THE 20/20 PLANNER

Bring the 20/20 Planner activities to life by using this innovative online multi-media presentation available at www.cleanairpartnership.org/2020. Use it in your classroom to introduce students to the 20/20 Planner activities that they will be doing at home. You don’t need any special software – just the internet and a pair of speakers. Students can also access this presentation at home for extra support.

BONUS! A FULL LENGTH “IN-CLASS” UNIT

20/20 offers thirteen in-class worksheets (plus a Glossary of Terms) on energy use, air quality and climate change, complete with ideas for teaching each lesson. Go to www.cleanairpartnership.org/2020 to download and print any or all of the black-line masters. This unit meets many Ontario Curriculum expectations.

Table of Contents

This guide offers you creative ideas for introducing the 20/20 Planner activities with your students in the classroom before they do them at home with their Clean Air Buddies. In Section 3, you will find teacher’s background notes and suggested questions for each 20/20 Planner activity that promotes student participation and targeted learning. This guide also gives you a list of the online “in-class” lessons and curriculum links for all 20/20 activities.

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Teacher's Checklist: how to participate in 20/20 The Way to Clean Air

- If you haven't done so already, order 20/20 Planners, a classroom poster and stickers for your students. Be sure to read through the 20/20 Planner online first to ensure that it fits with your teaching goals. *Note, hard copies are available to schools in the Greater Toronto Area. All other schools can download the resources from the Internet.*
 - Email: 2020@cleanairpartnership.org (for Toronto schools, email 20/20@toronto.ca)
 - Telephone: 416-338-1288 or 1-866-583-2020 (for Toronto schools, call 416-338-8070)
 - Web site: www.cleanairpartnership.org/2020

- Select a two-week period (minimum) during which you want to participate. **Students will need at least two weeks** to complete the “at home” checklist activities outlined in the 20/20 Planner.

- Review the online “in-class” unit in Section 2 of this guide. You may want to use some or all of these standalone lessons as preparation for the 20/20 Planner activities. This unit also contains a useful Glossary of Terms for students.

- Go to **www.cleanairpartnership.org/2020** and view the 20/20 online presentation with audio. Make a plan to use this innovative multi-media presentation in your classroom to introduce 20/20 Planner activities to your students.

- Distribute the 20/20 Planners to your students and walk them through the sections that you want them to do at home. Be sure to refer to Section 3 of this guide for some great ideas on introducing each activity in this booklet.

- Collect your students' 20/20 Planner checklists after they complete the two-week “at home” program and mail them to your local public health contact or to the Clean Air Partnership at: 75 Elizabeth Street, Toronto Ontario M5G 1P4. Students also have the option of entering their checklist activities online at **www.cleanairpartnership.org/2020**

20/20 In-class Unit

The chart below lists the lessons, content, and curriculum links for the 20/20 “in class” lessons available for downloading from www.cleanairpartnership.org/2020. This unit offers fun, thought-provoking black-line mastered worksheets, complete with a helpful lesson plan for each activity. Teachers may wish to use this unit in conjunction with the 20/20 Planner “at home” program, or as an introduction to Earth Day or other celebrations.

Lesson No.	Title	Content	Curriculum Links
1	*Why is air quality so important	Media article and worksheet that covers air quality, energy use and health.	language, science
2	According to my calculations, how much is 20%?	Introduces the concept of percentages to help students better understand the purpose of the 20/20 program.	language, math
3	*The Earth’s blanket	Brief backgrounder on the earth’s atmosphere and greenhouses gases. Includes vocabulary worksheet.	language, science
4	Conserving energy in school	Provides an easy-to-use energy use survey and worksheet that encourages students to pledge their commitment to conserving energy in school.	language, science
5	The Air Quality Health Index	Internet activity that teaches students how to use the Air Quality Health Index – an online tool that reports the health risk associated with local air pollution levels and offers advice on when it is safe to be active outdoors.	language, science
6	Here today, gone tomorrow!	Introduction to renewable and non-renewable sources of energy.	language, science
7	Renewable energy – is it worth the cost?	Worksheet that promotes thinking about the financial and environmental costs of renewable and non-renewable energy. Provides an opportunity for group presentations.	language, science
8	Earth Hour won over 85% of GTA adults	Article from The Star newspaper regarding Earth Hour and worksheet to support comprehension.	language, science
9	As Olympics near, smog blankets Beijing	Article from The Star newspaper about air quality in Beijing during the 2008 Olympics and worksheet to support comprehension.	language, science
10	The cost of gassing up – do the math!	Math exercise looking at rising gas prices over a 6-year period and how this might affect driving habits and air quality.	math, language
11	Environmental heros	Internet activity that introduces students to famous people who are champions for the environment. Includes an activity to help students envision themselves as environmental superheroes.	language, science
12	Cars and bikes – can they share the road?	Media article, case study and worksheet that explores sustainable transportation. Includes a survey for students to poll classmates on commuting habits.	language, social science
13	Celebrate clean air in 2020	Culminating activity asking students to prepare their acceptance speech for an award they will receive in the year 2020 for their contribution to improving air quality.	language, drama, science
	20/20 Glossary of Terms	Definition of terms that help students understand the concepts introduced in the 20/20 program.	

*This lesson requires the 20/20 Glossary of Terms

Introducing 20/20 Planner activities to your students

This section has been designed to give teachers background information about each 20/20 Planner activity and some possible questions (prompts) to ask students that will deepen their learning. Be sure to give students time to read through the pages before asking them the questions. The prompts have been carefully worded so that classroom discussions may meet a variety of curriculum expectations in language, math, and science. Since some of the checklist activities in the 20/20 Planner deal with percentages, you may want to first download and have your students complete the 20/20 “in-class” lesson entitled *According to my calculations, how much is 20%* from www.cleanairpartnership.org/2020. And remember, you can also view the 20/20 online multi-media presentation with audio to walk your students through the 20/20 Planner activities.

Before you distribute the 20/20 Planner

TEACHER'S BACKGROUND NOTES

Introduce the 20/20 program by writing the number 20 on the front board. Invite the class to brainstorm a list of things with which they associate the number 20. You can prompt student thinking and remind them that the number might appear in their phone number, in money, or in their address. Record their responses on the front board. Ask students what they think is meant by 20/20 vision and how it might be connected to our air. From that list of responses, ask students to predict which topics are most likely to be possible topics of study in their next unit. Circle their choices. It is important for students to predict so that they have more of a vested interest in what they are about to learn. You can give more clues by asking the following questions.

POSSIBLE QUESTIONS TO ASK STUDENTS

- How many things can you name in your homes that uses energy? (*fridge, computer, furnace*)
- Where does the energy used to operate these things come from? (*water, oil, coal, nuclear*)
- Is there an unlimited supply of energy? (*obviously not!*)
- What are some problems associated with energy use? (*air pollution, depletion of natural resources*)
- What kinds of things can you do to conserve energy? (*turn lights out, drive less*)
- Using a car or a truck is convenient, but there are some problems that using a vehicle can cause. What are these problems? (*carbon emissions, air pollution*)
- Do you agree or disagree that air pollution is a problem and why?

Distribute the 20/20 Planner without opening it

TEACHER'S BACKGROUND NOTES

Ask the students to keep the booklet closed until they have had a good chance to examine the cover. This will help them discover clues that will help them understand what they are about to learn. After you pique their interest with the questions to follow, have them fill in their name and the name of their Clean Air Buddy. Explain that the booklet exercises are to be done at home with a learning partner they choose as their Clean Air Buddy.

The Buddy is preferably someone they live with - a mom, dad, older brother or sister, grandparent or an adult friend. If a student is unable to work with an adult in their home (for whatever reason), you can help them identify a Buddy in the school. This could be a teacher or another adult. Record all of the Buddy names on a chart at the front of the classroom and keep it up for two weeks.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Describe what you see on the front cover of the 20/20 Planner.
- Which two categories are the animals divided into? (*three animals for reducing home energy use and three for reducing vehicle use.*)
- What animal can you most closely relate to and why? (*sample answer: I like the squirrel because I ride my bike a lot*)
- Why do you think a polar bear was chosen as the mascot for adjusting the house temperature?

Invite students to explore inside the pages of the 20/20 Planner

TEACHER'S BACKGROUND NOTES

Students may wish to discover how the booklet is divided, the activities where a certain animal appears, or even how many pages are inside. When they have had a good chance to explore, allow them to ask you questions. By having them ask questions, your students take the lead for the learning that follows. Record their questions on chart paper and hang it in the classroom for the next two weeks. Let the questions simmer with students to create a sense of anticipation. Tell them that most of their questions will likely be answered as they work through the program. They can keep track when an answer is provided. This process keeps students on their toes!

POSSIBLE QUESTIONS TO ASK STUDENTS

- On what page can you find the following:
 - letter to Clean Air Buddy? (page 2)
 - home energy savers' feedback form? (page 6)
 - tips on how to save energy if you live in an apartment? (page 9)
 - how to get around without using a car? (page 10)
 - home energy savers' quiz? (page 4)

20/20 Planner inside cover and page 1 – What is 20/20 The Way to Clean Air? How can you participate?

TEACHER'S BACKGROUND NOTES

These two pages will help to further introduce your students to the 20/20 program. Remind students that they are to guide their Buddies through these pages when they begin the program at home. Stress to your students that it is their turn now to become the teacher and they will learn so much more when they teach.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Summarize what Joseph Joubert says regarding the importance of teaching. (*when you teach something you really learn it twice.*)
- What does this mean to you?
- Do you think this statement is true today, given that it was spoken so many years ago?
- What do you think you will be teaching your Clean Air Buddy about over the next few weeks?
- Can you go online at home to learn about the 20/20 Planner activities? Do you need to?

20/20 Planner page 2 – Dear Clean Air Buddy

TEACHER'S BACKGROUND NOTES

This letter explains to the students' Clean Air Buddy what is being asked of them. Review the letter in class so that your students can explain it to their Buddy at home. Mention that Dr. Seuss wrote children's books including, *One Fish-Two Fish*, *The Cat in the Hat*, and *The Lorax*. *The Lorax* is a book about the importance of protecting the environment that was first published in 1971. If you are doing this program with younger students, you may want to read this book to them.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Who wrote the quote, "unless someone like you cares a whole awful lot...?"
- What do you think that this quote means?
- How many paragraphs are in this letter and what is the "theme" of each paragraph?
- Why do you think public health departments are involved in a program that teaches families how to conserve energy in their homes and reduce driving?

20/20 Planner page 3 – *What is inside of this 20/20 Planner?*

TEACHER'S BACKGROUND NOTES

Have students review the layout of this table of contents to help them understand how to read charts. Decide which activities that you want your students to do over the next two weeks and have them circle them. The two checklist activities that require students to bring the information back to you (pages 5 and 13) need to be started on day one at home. Students can also enter this checklist information online at www.cleanairpartnership.org/2020. You can decide whether you want to encourage this as an option.

POSSIBLE QUESTIONS TO ASK STUDENTS

- What do you expect to see on this page as a result of reading the title?
- Describe how the information on this page has been sorted and classified.
- How many activities are there in this 20/20 Planner that can help you reduce home energy use by 20%?
- If your Clean Air Buddy does not drive, should you complete the activities in Section Two?
- On which page are the checklists that you will need to bring back after two weeks?

20/20 Planner page 4 – *Home energy savers' quiz (and answer key on pages 15 and 16)*

TEACHER'S BACKGROUND NOTES

The goal of this activity is to challenge students and their Buddies on what they know about conserving energy. Introduce this activity by reading a few of the questions and inviting the students to guess the answer. Be sure that they don't put the answer in the space provided since they will be doing this quiz with their Clean Air Buddies at home. Tell them that the answer to each question (on pages 15 and 16) contains a lot of good connections to more energy saving programs and incentives that their Buddy should be sure to read. To prepare students for completing this at home, you may want to divide students into smaller groups and challenge each group to discuss one question and one answer and then present it to the class. You may also want to review some of the vocabulary in the answer key to ensure comprehension.

POSSIBLE QUESTIONS TO ASK STUDENTS

- What does the title on this page tell you about this exercise?
- What are you supposed to do with the chart?
- How many questions do you think you can answer on your own without your Buddy?
- Which words are you unfamiliar with? How can you find out the meaning of these words?
- Have you ever seen similar messages about energy conservation in commercials on television or in magazines?

20/20 Planner page 5 – Home energy savers’ checklist Part I

TEACHER’S BACKGROUND NOTES

Review the checklist with students and instruct them to try some or all the activities with their Clean Air Buddy beginning on the first day of their **two-week “at home”** program. Many of these actions can be done in either a house or in an apartment. Get them started by asking them to check off the activities they are already doing. Set up a calendar in your room that will help students identify the two-week period during which they will participate. Be sure to announce the date that they are expected to return the completed checklist to you. Let them know whether you would also like them to enter the checklist online.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Describe how you are being asked to sort your response to whether you will do an activity.
- Which activities do you predict you and your Clean Air Buddy will do over the two week period? Pencil-in your predictions but be sure to go over these with your Buddy.
- Which activities suggest a seasonal change in temperature can cause increased energy use? (*set thermostat up or down.*)
- Which activities suggest that you can reduce energy use by cleaning something? (*clean coils on fridge.*)
- If you do everything on the list for two weeks, what percentage of energy use will you reduce in your home? (5%)

20/20 Planner page 6 – Home energy savers’ feedback form

(Note: these instructions also apply to 20/20 Planner page 14 – Reduce your driving feedback form)

TEACHER’S BACKGROUND NOTES

Review this form with your students and remind them that it needs to be filled out with their Buddy once they have completed the two weeks of checklist activities. Point out that the page is divided into two sections: *Help Us To Learn and Keep In Touch*. The information collected on this page helps the 20/20 program understand how students and their families are contributing to improvements in air quality. Students must cut this page out of their 20/20 Planner and bring it into you. Gather up all of your students’ forms and mail them to your local public health unit or the Clean Air Partnership. The address is on the form.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Who is this form addressed to and who should complete it?
- When should this form be completed?
- What is the difference between the two sections: *Help Us to Learn and Keep In Touch*?
- What will happen if you and your Buddy complete the *Keep in Touch* section?
- What information is contained in the fine print at the bottom of the page?
- Do you think that you and your Buddy will continue with your actions by participating beyond two weeks?

20/20 Planner pages 7 & 8 – Home energy savers’ checklist Part 2

TEACHER’S BACKGROUND NOTES

This is a checklist that students and their Buddies have the option of doing after the two-week program is complete. Public health units hope that the easy-to-do two weeks of actions will lead families to move onto this checklist over the long term.

POSSIBLE QUESTIONS TO ASK STUDENTS

- How is the checklist chart organized?
- What is the difference between Column 1 and Column 2?
- Tell me the energy saving actions associated with “STUFF YOU DO EVERYDAY”
- Tell me the energy saving action associated with “TOO MANY MACHINES”
- Which activities on page 7 can reduce the most energy? (there are two at 10% under “STOP THE DRAFTS”)
- Which activity on page 7 will reduce the least energy? (there are two at 1% in “TURN IT UP TURN IT DOWN”)

20/20 Planner page 9 – Apartment (or condo) energy savers’ checklist

TEACHER’S BACKGROUND NOTES

Begin your introduction to this page by taking a poll to determine how many students live in apartments and/or condominiums. You may want to express this number as a fraction on the board. Review the tips on this checklist and remind students who live in apartments that they too can participate in 20/20.

POSSIBLE QUESTIONS TO ASK STUDENTS

- Do you think you would use more or less energy if you lived in an apartment or condo? Why?
- What energy-consuming appliances or equipment may be in an apartment or condo that would not be in a house? (*elevator, hallway lights, intercom system, etc.*)
- If heat rises, does that mean that people who live on the top floor would not have to use as much energy to heat their homes?
- What do you think the Energy Star symbol means in tip #3? Have you seen it on anything in your house?
- If you wanted to have someone from Eneract suggest further energy-savings activities, how would you contact them?

20/20 Planner page 10 – Leave your car at home

TEACHER'S BACKGROUND NOTES

This is the first activity in the Transportation part of the 20/20 Planner and it is designed to help Clean Air Buddies reduce their vehicle use by 20%. You may want to introduce this activity by saying “leaving your car at home can save lives” and have the students give you feedback on this observation. Follow up with this quote by Dr. McKeown, Toronto’s Medical Officer of Health: “For the first time in Ontario, we have isolated the health impacts of vehicle emissions... A 30 per cent reduction in motor vehicle emissions in Toronto could save nearly 200 lives a year and significantly reduce hospitalization and illness...” (Source: www.toronto.ca/health/hphe/pdf/air_pollution_burden_newsrelease.pdf)

POSSIBLE QUESTIONS TO ASK STUDENTS

- Read the first paragraph of this page to yourself and tell me what the purpose is of this activity.
- Name as many ways as you can think of (other than driving) for adults to get to work and for kids to get to school.
- Explain how the chart is organized and what you are supposed to do with it.
- According to the World Health Organization, how far should you walk every day? (5km or 50 minutes)
- Estimate how far you walk in one day. How close do you come to the recommended distance? (Use concrete distance examples to help students understand distance.)
- Why is it healthy to walk and cycle?
- What are three types of public transit?
- Give an example of how you think trip chaining works.
- Do you think there is a need for a 20/20 transportation program throughout the world?

20/20 Planner page 11 – Emissions be gone!

TEACHER'S BACKGROUND NOTES

Tell students that to reach a 20% reduction in vehicle use, their Buddy will need to walk, take public transit, cycle, and carpool more often. But, there will be times when their Buddy will need to use a car. This page gives some great tips on reducing tailpipe pollution.

POSSIBLE QUESTIONS TO ASK STUDENTS

- What is the main message of this activity?
- Do you know what types of chemicals are produced by a car when it runs? (carbon dioxide (CO_2); Nitrogen oxides (NO_x); Hydrocarbons (HC); Sulphur dioxide (SO_2); particulate matter (PM_{10} and ($PM_{2.5}$); and ozone (O_3))
- Explain how you think your Clean Air Buddy can reduce the amount of tailpipe pollution.
- Which type of car uses less fuel?
- Is it wasteful to idle your car?

20/20 Planner page 12 – How far do you go?

TEACHER'S BACKGROUND NOTES

Begin this exercise by piquing your students' interest with the puzzle in the "Here is a challenge!" box at the bottom of this page: "How much carbon dioxide comes out of the tailpipe when one litre of gas is burned in an average car? One litre of gas weighs .75kg." The answer: approximately 2.4 kg of carbon dioxide. (Source: WikiAnswers -wiki.answers.com/Q/How_does_a_One_liter_of_gasoline_weight).

Challenge your students to think about how it is possible that the emissions weigh more than the original gas. Is the final weight a result of adding oxygen to the gasoline? Yes - in fact, 70% of the carbon dioxide weight is made from the oxygen in the air and does not originate from the gasoline. Gasoline, when burned, attaches to oxygen. Oxygen has weight, and therefore, the final product (CO₂) weighs more than the original gasoline. Carbon dioxide emissions from tailpipes are responsible for over 60% of the greenhouse effect, causing climate change. (Source: www.climatechangeconnection.org/Emissions/Tailpipeemissions.htm#NOx)

Once you have discussed this question and answer with students, remind them to challenge their Buddies at home.

Before students work through this sheet with their Buddies, it is important that they understand how far 1 kilometre is.

POSSIBLE QUESTIONS TO ASK STUDENTS

- How long is one metre?
- How many metres are in a kilometre?
- Estimate how long it would take for you to travel 10 metres? How about 20 metres? How about one kilometer?
- What is the purpose of this activity?
- How is the chart on this page organized?
- How far do you think it is from your home to your school?
- Do you think it would be better to walk or take public transportation to the grocery store? Why?
- Are there any other places you travel to regularly that are not on this list? Add them to the bottom of the chart.
- If you want to know the exact distance between two locations listed on your chart, where will you go to calculate this? (<http://ca.maps.yahoo.com>)
- How far do you predict your Buddy travels each week in a vehicle?
- Which driving destination do you think can be reduced the most?

20/20 Planner pages 13 – Clean the air checklist

TEACHER'S BACKGROUND NOTES

The purpose of this checklist is to encourage Clean Air Buddies to reduce their driving by 20% over a two-week period. You may want to keep a calendar at the front of the classroom to track the passing of two weeks and have a daily discussion on how well the Buddies are doing at reaching their reduction target. Public health units hope that this two-week program will motivate families to reduce their driving all year round. Have students suggest this to their Buddies and remind them that the warmer months are great for biking or walking, while carpooling and public transit may make more sense in the cooler months.

You can either put students in pairs to go through the questions to follow or review them with the whole class.

POSSIBLE QUESTIONS TO ASK STUDENTS

- What is the major objective of this activity?
- Explain the difference between steps 1 and 2.
- If your Buddy traveled 100 km in a vehicle in one week, what would the kilometre reduction target number be? ($100\text{km} \times .20 = 20 \text{ km}$)
- What are the four target driving destinations to consider?
- Which destination do you think your Buddy will have the easiest time reducing his/her driving to? Why?
- Which destination do you think your Buddy will have the hardest time reducing his/her driving to? Why?
- How does reducing the amount of driving help the environment?

20/20 Planner page 14: Reduce your driving feedback form

Instructions for this page are the same as those for the “20/20 Planner page 6 - home energy savers’ feedback form”. Please see page 9 in this guide.

How to access and download 20/20 online support – “at home” and “in-class”

Go to: www.cleanairpartnership.org/2020

Clean Air Partnership
75 Elizabeth Street
Toronto, Ontario M5G 1P4
Tel: 416-392-1288 E-mail: 2020@cleanairpartnership.org

The 20/20 program has several easy-to-use online features that offer extra support for you, your students and their families. The 20/20 online support is hosted by the Clean Air Partnership – a non-profit organization working with public health units across the Ontario to improve air quality and reduce the risk of climate change. **The online support listed below can be accessed by you in the classroom or by your students and their families at home.** The user needs a computer, internet access and a set of speakers. For classroom viewing, you will also need an LCD projector and a screen.

1. 20/20 AT HOME

The “20/20 at home” online multi-media presentation is a companion piece to Section 3. of this Teacher’s Guide. It helps you introduce the 20/20 Planner to your students in the classroom before they begin the two-week program at home. The presentation format allows you to click from slide to slide at your own pace. The voice-over instructions help support the student’s comprehension of the activities in the 20/20 Planner.

2. 20/20 PLANNER CHECKLISTS

In the 20/20 Planner booklet, there are several checklists that guide students through conservation activities related to home energy use and vehicle use. Students are instructed to return these checklists to the teacher after they participate in the program for two weeks at home. The Clean Air Partnership has developed electronic versions of the checklists and offers students a chance to track their energy reductions (and win a prize!) if they enter their activities online. You can encourage your students to do so if this fits within your teaching goals.

3. 20/20 ONLINE SCHOOL GROUP

If you choose to have your students enter their 20/20 checklist actions online, you can also create an online group for monitoring school-wide emissions reductions. It allows students to track the cumulative CO₂ reductions of 20/20 activities achieved by 20/20 participants in your school. To find out more about creating your own school group, send an email to: gkalapos@cleanairpartnership.org.

Links between the Ontario Curriculum and 20/20 Planner activities

As you work through the suggested questions and 20/20 activities with your students, you will also be covering some curriculum expectations. We have selected some of the expectations and listed them on this page. The language expectations are similar for all grades. Math and science are specific to grade 5 and 6.

Page No. in 20/20 Planner	Possible Curriculum Links
Inside cover, 12, 13, 14, 15, 16	Language (Oral Communication) 1.4 demonstrate an understanding of the information and ideas in oral texts by summarizing important ideas and citing a variety of supporting details.
2, 9, 11, 12, 14, 15, 16	Language (Oral Communication) 2.2 demonstrate an understanding of appropriate speaking behaviour in a variety of situations, including paired sharing, dialogue, and small- and large group discussions.
cover, inside cover, 1, 9, 10, 12, 15, 16	Language (Oral Communication) 2.3 communicate orally in a clear, coherent manner, presenting ideas, opinions, and information in a readily understandable form
2, 4, 9, 10, 12, 13, 14, 15, 16	Language (Reading) 1.3 identify a variety of reading comprehension strategies and use them appropriately before, during, and after reading to understand texts.
cover, inside cover, 1, 4, 5, 6, 10, 11, 12	Language (Reading) 1.4 demonstrate understanding of a variety of texts by summarizing important ideas and citing supporting details.
2, 3, 4, 9, 10	Language (Reading) 1.5 use stated and implied ideas in texts to make inferences and construct meaning (between the lines).
inside cover, 1, 2, 4, 6, 9, 10, 12, 13, 14, 15, 16	Language (Reading) 3.1 automatically read and understand most words in common use.
2, 6, 7, 8 9, 10, 12, 13, 15, 16	Language (Reading) 3.3 read appropriate texts with expression and confidence, adjusting reading strategies and reading rate to match the form and purpose.

continued on next page

Page No. in 20/20 Planner	Possible Curriculum Links
cover, 3, 5, 6, 8, 10, 12, 14	<p>Language (Writing) 1.4 sort and classify ideas and information for their writing in a variety of ways spell familiar words correctly.</p>
9, 10, 12, 14, 15, 16	<p>Language (Media) 1.3 express opinions about ideas, issues, and/or experiences presented in media texts, and give evidence from the texts to support their opinions.</p>
7, 8, 9, 12	<p>Grade 5 Math (2005) (Number sense and numeration) Read, represent, compare, and order whole numbers to 100 000, decimal numbers to hundredths, proper and improper fractions, and mixed numbers.</p>
7, 8, 9, 12	<p>Grade 5 Math (2005) (Number sense and numeration) determine and explain, through investigation using concrete materials, drawings, and calculators, the relationship between fractions and their equivalent decimal forms.</p>
9, 10, 12	<p>Grade 6 Math (2005) (Number sense and numeration) estimate quantities using benchmarks of 10%, 25%, 50%, 75%, and 100%.</p>
inside cover, 1, 4, 5, 11, 12, 13	<p>Grade 5 Energy and Control: Conservation of Energy Identify ways humans use energy, evaluate the economic and environmental costs of each, and describe ways to avoid wasting energy (e.g., lowering the thermostat during the night)</p>
inside cover, 1, 4, 5, 11	<p>Grade 5 Energy and Control: Conservation of Energy Identify design features that improve the energy efficiency of buildings, devices, and systems (e.g., double glazing).</p>
5, 11	<p>Grade 5 Energy and Control: Conservation of Energy Describe conditions that could affect the consumption of electrical energy in the home and at school (e.g., seasonal variations in heat and light requirements).</p>
14	<p>Grade 5 Energy and Control: Conservation of Energy Develop a plan for reducing electricity consumption at home or at school, and assess how this change could affect the economy (e.g., jobs) and our use of natural resources.</p>

Notes

A series of horizontal dotted lines for writing notes.



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