healthy air

# What's in your air?

## Air pollution teaching pack


**Creative and practical teaching activities for Key Stages 1 and 2 with links in to National Curriculum Science, Maths and English**

environmental protection uk

**Created by Environmental Protection UK for the Healthy Air Campaign**

# Introduction: Why air pollution?

**In the past air pollution has not been a topic covered in many primary schools, but it is a hot news item these days. The current primary curriculum means contentious news items should be on the agenda: information and persuasive texts in literacy; environmental change and sustainable development in Geography; preparing to play an active role as citizens in PSHE. Air pollution can and should be one of the stories considered. The latest research shows that air pollution is having a massive impact on public health, particularly on children who are vulnerable to its effects.**

**This pack gives some basic background information that children could think about and discuss. It also provides ideas for relevant and interesting activities that can be tackled by children across the primary age range. Environmental Protection UK has a well established place in supporting teachers in this important area and we hope that this pack will help involve younger children in work that could benefit their lives and help protect their local environment.**

# Teacher's notes on activities

## The posters

At the end of this pack there is one main poster and three supporting posters that can be displayed on your interactive whiteboard, or printed out if necessary. They provide a thought-provoking stimulus to classroom discussion. Each scenario has characters involved in an exchange of views — at least one is questionable. Ask the children if they can spot a statement that is flawed or needs challenging. Perhaps a small group could act out and extend the dialogue, or substitute a more considered dialogue in their own version of the scenario.

## Section 1 Activities

**1a - Is it really funny?**
This activity addresses the Geography objective of children learning about environmental change and sustainable development.

**1b - Make your own**
This activity will encourage pupils to express their understanding of the issues around air pollution artistically.

**1c - Can I smell burning?**
This activity addresses the KS2 Science objective about burning materials resulting in the formation of new materials. This activity has safety implications; check your school science policy about burning things. Remember that, apart from the risk of skin burns, burning plastic materials and man-made fibres can give off toxic fumes.

When a candle burns it is the wax that is responsible for most of the flame. Wax is a hydrocarbon, i.e. a compound of hydrogen and carbon. When it burns it combines with oxygen to produce water and carbon dioxide. In a yellow flame the wax is not burning completely and so tiny particles of carbon are being given off. These collect on the surface of the plate or wood. If the plate or wood is not there then the carbon goes up into the air. Tiny particles of wax vapour also go up into the air, which is why you can smell the candle for some time after it is blown out.

**1d - Mucky leaves**
This activity is useful for National Curriculum Science Sc1 Scientific enquiry. A lot of the dirt is oil based and so the leaves can only be cleaned properly with organic solvents such as methylated spirits and nail varnish remover. The dissolved grime will discolour the solvent, but such chemicals should not be used by the children, you will have to do it for them. Check with your local adviser about the rules concerning organic solvents.

**1e - Mucky buildings**
This can be a very useful piece of Geography fieldwork.

## Section 2 Activities

**2a - How busy are the roads?**
**This will encourage children to solve a given problem by collecting, analysing and presenting data. The response will vary according to the age of the children: Y2 children can present the data as a simple pictogram; Y4 children might use pictograms where the symbol represents more than one child; Y6 children could use bar graphs and pie charts. The key to the activity is the discussion of what the data tells you. Make sure that you are aware of your school's regulations about working off site.**

**2b - The good old days**
**This activity addresses National Curriculum historical enquiry objectives of finding out about events in the past from a range of sources including ICT. The writing on the website is a bit grown up, but many Y5/ 6 children should be able to manage it on their own. Younger children might need your help**

## Section 3 Activities

**3a - What a wheeze!**
This activity addresses Sc2 Science, and relates to PSHE Developing a healthy safer lifestyle. With the school nurse children can investigate the function of their lungs, discuss air pollution and explore its health-related issues.

**3b - It's hot in here!**
This activity is mainly a vehicle for obtaining and presenting evidence for Scl Scientific enquiry. The children will be measuring temperature. They can be guided to link the measured temperature difference to the fact that the heat is trapped inside the bottle, and then they will need to present their findings. Strictly speaking, the closed and open bottles are not a perfect analogy for global warming because most of the heat lost from the open bottle is through evaporation of the water, whereas the Earth loses its heat by radiation into space. However, the idea of heat being trapped is a good analogy.

## Section 4 Activities

*If your school participates in one of our partner's campaigns (e.g. Sustrans' Walk to School Week) it may be suitable to link it with the following section 4 activities.*

**4a - How do we get to school?**
This activity will get pupils to solve a given problem by collecting, analysing and presenting data. The response will vary according to the age of the children: Y2 children can present the data as a simple pictogram; Y4 children might use pictograms where the symbol represents more than one child; Y6 children could use bar graphs and pie charts. The key to the activity is the discussion of what the data tells you. You may have to be sensitive to the feelings of parents. It is probably not a good idea to be over condemnatory about people who come by car, there may be very good reasons, e. g. the school run may be part of a longer run to work.

**4b - How far do we walk?**
This activity is linked to the Geography skills of using and drawing maps at a range of scales. The level of support needed, and the scale of map that can be used will vary according to the age and ability of the children. The discussion can make an important contribution to children's knowledge and understanding of environmental change and sustainable development. A very large-scale map of your local area is available from the Ordnance Survey; details of how to contact them are in the further information section or you could use a satellite view from an online map site.

**4c - Why don't we all walk?**
This activity can be done with KS1 children, but it will probably be most successful with KS2 children, particularly Y5/6. It makes a significant contribution to the PSHE strand on preparing to play an active role as citizens. It also has a major part to play in developing speaking and listening skills within National Curriculum English. It may need a chairperson to avoid group pressure being applied to children who are not able to walk to school for whatever reason.

**4d - That's what I think!**
This activity makes a significant contribution to the PSHE strand on preparing to play an active role as citizens. It also has a major part to play in developing speaking and listening skills within National Curriculum English. Encourage discussion about car sharing and 'park and walk'.

## Section 5 Activities

**5a - Read all about it!**
This creative writing activity will give pupils a particular focus to develop literacy skills while they learn about another subject in the curriculum, an important aspect of the Primary Framework for Literacy.

**5b - Share your Healthy Air**
This activity will develop pupils' IT skills.

# Section 1

## Air pollution: what's the problem?

**Air is all around us, we breathe it in and out, and scientists call it the atmosphere. We can't see the air and so we don't think about it very often — we take it for granted. We only really notice it when something goes wrong, when it smells, when it is smoky, when we can't get enough.**

Air is a mixture of gases, and most of the gases are in the air because of natural things. People make a difference to the air: they build and live in houses, they drive cars and lorries, they fly in aeroplanes, and they make things in factories. All of these activities make waste, and some of that waste goes into the air as pollution. Sometimes we can see the pollution, for example car exhaust fumes and smoke, but a lot of the chemicals we make cannot be seen when they go into the air.

Pollution is only a small part of the air that we breathe, but it only takes tiny amounts of pollution to make a big difference. Nature can cope with some of our pollution, the chemicals break down or are used up naturally but we are making more pollution than nature can handle. Pollution is making a difference to our lives and the lives of other living things. It makes living things (including us) unhealthy some plants and animals are dying out because of pollution. The effect of air pollution can be seen on some buildings, they are turned black over time and have to be cleaned. It even changes the weather. We need to do something about it.

**Atmosphere**: a mixture of gases surrounding the Earth. The principal constituents of the atmosphere of the Earth are nitrogen (78%) and oxygen (21%). The atmospheric gases in the remaining 1% are argon (0.9%), carbon dioxide (0.03%), varying amounts of water vapour, and trace amounts of hydrogen, ozone, methane, carbon monoxide, helium, neon, krypton and xenon. Exhaled air contains about 16% oxygen and 4% carbon dioxide; the amount of nitrogen is not affected by our respiration.

**Common atmospheric pollutants**: volatile organic compounds (such as benzene, formaldehyde, butane and petrol vapour), carbon dioxide, carbon monoxide, nitrogen oxides, ozone (needed at high altitude to protect us from the sun's rays, but actually toxic if it accumulates in the lower atmosphere), hydrogen sulphide, sulphur dioxide, particulate matter (e.g. soot particles), and vaporised metals (such as lead, mercury and cadmium).

**70% of air pollution can be caused by traffic. The proximity of traffic to where we live work and play makes it a dangerous source of pollution.**

The latest health evidence suggests that it is mainly particulate matter (microscopic particles produced mainly when fossil fuels are burned) that causes the biggest long term health impacts.

See the resources listed in the further information section at the end of this pack for more details.

# Section 1 Activities

### 1a - Is it really funny?

Ask the children to look at the big poster that comes with this pack. It is meant to make them laugh, but it is also meant to make them think. How many different things can they spot on the poster that are causing air pollution? How many of them are really necessary? Make a list of suggestions for things that people could do to cut down on the air pollution that they are causing.

### 1b - Make your own

Now ask the children to design their own poster. Perhaps it could show some of the things in their local area that cause air pollution. It could link to the traffic survey (2c).

**A huge build up of pollution on this wall has allowed someone to create artwork by removing the layer of grime. Can your pupils find a wall as polluted as this?**

### 1c - Can I smell burning?

You will need candles and a white plate or piece of wood for this activity. When things burn they sometimes give off smoke and it is obvious that the air is being polluted. When anything burns it gives off chemicals into the air, usually carbon dioxide and water vapour. You cannot always see these chemicals being burnt off, but they are there. If you leave candles burning and then blow them out, you can smell that there is something in the air. To demonstrate this to the children, light a candle and then put a china plate or piece of wood at the top of the flame for a few seconds. Ask them what has happened to the plate or piece of wood? What do they think the residue is that has appeared? Where do they think it came from?

### 1d - Mucky leaves

This activity will involve working near a busy road. You will need water and cotton wool to clean leaves. Traffic emissions cause around 70% of air pollution in the UK. Some of this pollution settles down on things near the road. To investigate roadside pollution, ask the children to make a collection of leaves from bushes near a busy road and ones from further away. Ask the children to comment on how dirty they are. Can they clean the dirt from the leaves with water and cotton wool? Is there a link between how near to the road the leaves were and how dirty they were? Ask the children how they would display their results.

### 1e - Mucky buildings

This activity will involve working near a busy road. You will also need a map of the local town or village centre that you visit. Look at the buildings near a busy road; look at the windows and the windowsills. Ask the children to compare them with windows and sills on buildings that are not near a busy road. A visit to a town centre should allow for the collection of evidence about the effects of air pollution. Look for blackened buildings, crumbling stonework, discoloured metal. Ask the children to also make a note of any smells. When you return to school ask the children to log their evidence on a map of the town or village centre.

# Section 2

## What causes pollution?

**To be horribly honest, we do! Almost everything people do causes some kind of pollution. Breathing doesn't cause pollution because that is natural, but things like cooking a meal or heating a home do because they use up gas or electricity. However, the biggest cause of air pollution that creates unhealthy air is caused by the way we travel and transport goods.**

Cars, vans and lorries use up petrol or diesel and this produces a lot of polluting gases and particles. Walking and cycling are better for the environment than being driven, and they are better for you because they keep you fit. Our roads and motorways are much busier than they were just 10 years ago. The millions of vehicles driving on them every day create over two thirds of the pollution we breathe in the UK. Public transport is a much better way to travel to protect the environment, but old buses and coaches tend to be very polluting. While transport is a big problem for the air we breathe, there are many other causes of air pollution.


**In 2010, the overall motor vehicle traffic volume in Great Britain was 303.2 billion miles! Almost a quarter of all journeys by car are shorter than 1 mile.**

Every time we use gas to cook or to keep our house warm it makes carbon dioxide and this goes into the air. Most power stations bum gas or coal to make electricity and that makes more carbon dioxide. The more electricity we use, the more carbon dioxide is let into the air. Leaving a door open at school makes a difference because it lets heat out so more has to be produced to keep you warm!

We also use a lot of chemicals that go straight into the air, like the stuff inside aerosol cans. Paints and household cleaners have chemicals in them that evaporate into the air. The nice smell from your hairspray or polish is caused by a chemical that has gone into the air, only a tiny bit goes up your nose. Air fresheners aren't what they seem, they may give off a nice smell but they actually pollute the air.

Aeroplanes are a very polluting form of transport that we use. It's not just the planes themselves, but all the traffic that travels to the airports that makes them very polluted areas.

Large factories can use as much gas or electricity as hundreds of homes and so they cause a lot of carbon dioxide to be put into the air. Sometimes they give off other polluting chemicals as they make their products. There are laws about how much pollution factories are allowed to let out. The owners of the factories have to do things to treat the pollution before it can escape, but not all of it can be stopped.

One big problem is packaging. Packaging uses up natural materials and is quickly thrown away. It even pollutes the air if it is incinerated or burnt. Plastic in particular can give off poisonous chemicals. The more rubbish you produce, the more air pollution you cause. You might think your rubbish won't make a big difference, but it all adds up.

# Section 2 Activities

**2a - How busy are the roads?**

You will need clipboards, pens and paper for this activity The roads near a school are quite often busy at the start and end of school, but what are they like at other times? Organise a traffic survey at a safe spot near your school. Children will need to record how many cars, vans, buses and lorries go past the survey spot every hour. Organise the class into teams so that they can each do a shift. Different teams might go out at different times of the day, some in the morning, some in the afternoon. Ask the children to record how many people are in each vehicle. When they have collected their data, ask them to think about what the results tell them. Are the roads busier at different times of the day? Where do they think most of the traffic is going? The children can then present their data to others using either pictures, a table of results, or graphs.

**2b - The good old days?**

Air pollution is not new. If you have covered the Victorians, children will know about the terrible smoke and fumes in cities as people built more and more factories. In class, get the children to research the Great Smog of 1952 online (see the further information section for some good resources). Ask the children to write a one page summary of the great smog, including its causes and impacts. Explain to the children that air pollution still has a huge impact (4,300 premature deaths are still attributable to air pollution in London each year), even though it is no longer visible. This is because air pollution is now primarily caused by traffic, instead of industrial pollution.

**The 'Great Smog' in 1952, resulted in over 4,000 deaths in London. Even though we can't see the air pollution today, over 4,000 people are still dying early each year in London because of long-term exposure to pollution.**

# Section 3

## What does pollution do?

**Different types of pollution have different effects. It can harm the environment and our health, with short term and long term impacts for both.**

**Air pollution and health:** Many pollutants make you less healthy. A lot of children suffer from asthma these days and the latest evidence suggests that air pollution causes up to one third of new asthma cases. The short term impacts of traffic emissions can include sore throats and headaches. Breathing polluted air over long periods can have a life-long health impact, reducing lung capacity and making conditions like heart and lung diseases worse. It can also lead to early death. In fact, the latest government research has shown that air pollution is having a bigger impact on the health of people in the UK than obesity. So the air we breathe is as important for our health as the food we eat.


**Asthma cases are on the rise. A study carried out across Europe in 2011 suggests that up to 30% of all new asthma cases in children are caused by living next to busy roads.**

**Air pollution and the environment:** Some of the chemicals are dissolved in the rainwater and make it acidic. The acid is very weak and will not actually bum you, but over a long time acid rain can kill some insects and plants. Animals that feed on those insects and plants will then be short of food. Acid rain has a very bad effect on fish because they are very sensitive to pollution. Some of the chemicals have an effect high up in the air. High up in the sky above where planes fly there is a layer of the gas called ozone. This layer helps to protect us from some of the bad effects of sunlight. Chemicals called CFCs were once used in aerosols and fridges. CFCs damage the ozone layer, which means you can get sunburnt much more quickly. We have stopped using CFCs now but they will stay in the air for a long time and so are still damaging our protective ozone layer. The extra carbon dioxide that we are making is causing the world's weather to change; it is causing global warming by something called the greenhouse effect. You might think that the weather warming up would be a good thing, but it is not as easy as that. If the world warms up too much then the ice at the North and South Poles will melt. This will raise the sea level and lots of land near the coast will be flooded. Some countries, such as Bangladesh and the Maldives, could disappear altogether. Weather forecasters are not sure how global warming will affect the weather. Some say we will get more bad weather, including hurricanes and tornadoes. Others say that the oceans will be changed in such a way our weather might end up getting a lot colder. A greenhouse works because light from the sun passes through the glass, and is absorbed by the ground. The resulting heat (being in the infra—red part of the electromagnetic spectrum) is trapped inside to warm the plants. The atmosphere acts like the glass of the greenhouse - it lets in the sun's light energy and keeps in the heat. The extra carbon dioxide in the atmosphere has the same effect as thicker glass in a greenhouse.

# Section 3 Activities

### 3a - What a wheeze!

Asthma is now very common, and evidence suggests that air pollution cannot only act as a trigger for attacks, but actually cause the condition. Seek the involvement of your school nurse for this activity. Ask the nurse to come in to the class and measure the lung capacity of a selected group of children. Once this has been done the nurse can lead a discussion about what can cause poor lung capacity such as asthma, smoking, etc. The aim of this activity is to raise awareness of air pollution and health—related issues. To safeguard the sensibilities of any asthma sufferers in the class, do not single them out unless they are willing to talk about what triggers their asthma.

An alternative is to ask the children to make ink drawings. You will need ink, a straw, and A3 sheets of thick paper for each pupil. Get each pupil to place a few drops of ink at the bottom centre of their page. Now ask them to take a deep breath and blow the ink across the page. The resulting pattern will resemble the branches within a human lung. Compare the drawings with anatomical diagrams of the lung. Get pupils to imagine the pollutants travelling down the tubes of the lung, just like their ink travelled in tubes across the page. See the "Invisible Dust" website for examples of this activity.

An ink drawing created by blowing through a straw resembles the anatomy of a human lung.

### 3b - It's hot in here!

You need two plastic bottles, some water, two thermometers, and a sunny day for this activity. Cut off the top quarter from one of the bottles. Half fill each bottle of water, put in the thermometers, put the lid back on the whole bottle, and then stand the bottles in a sunny position. The sun should warm up the water in each bottle. Ask the children to describe what is happening and the difference between the two bottles. Ask the children to draw the experiment and then write about it.

# Section 4

## Air quality laws are often breached

**There are laws to protect us and the environment from the worst effects of pollution, but to stop pollution altogether requires a lot of work. We need to keep warm, to cook our food, to make things in factories, and sometimes we need to travel further than we can walk or cycle. The laws that have been made say that people and companies should try their best to cut down the pollution they create, or clean it up themselves. Given the scale of the problem, it's essential we do as much as we can to help reduce pollution and our exposure to it. The Environment Act 1995 laid a duty on local authorities to assess the quality of the air in their area. They must manage air pollution to make sure it does not reach levels that are harmful to health. If they think pollution levels could be a risk to health they must declare an air quality management area, and draw up action plans to improve air quality. You can check your local air quality on the web (see further resources for a link).**

Even though laws are in place, as of 2012 some of these are being broken because air quality in many places across the UK is still far too high. This means we all need to do our best to cut air pollution, as well as getting our leaders to do more about cleaning up the air.

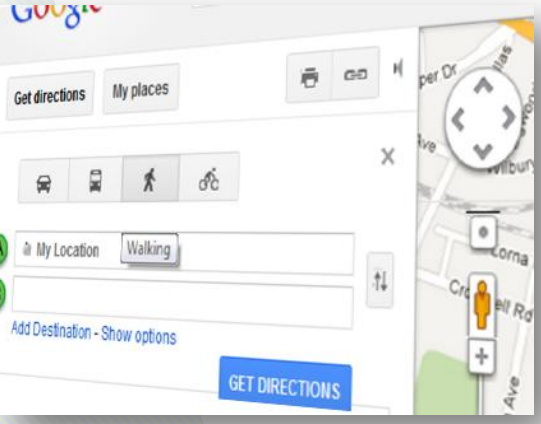
Some of our partners have excellent resources to encourage more active, sustainable travel to school. See Sustrans and LivingStreets websites for various projects and campaigns you can get your school involved with. It will probably be possible to link the activities here with those activities. Also, see this resource from Hounslow Borough Council for an example of an excellent Schools Travel Planner.

**The Environmental Protection Act 1990 sets standards controlling all forms of pollution, including atmospheric pollution, emitted from factories and other premises. The UK, as a member of the EU, is also subject to the European Air Quality Directive, which sets health-based legal targets and limits for outdoor air pollution.**

# Section 4 Activities

### 4a - How do we get to school?

The way children travel to school can make a difference to their health and the environment. Some have to travel a long way; others may live close to the school. Ask the children to carry out a survey to see how many of them walk, cycle, come by car, or by bus. Do any share a car with other families? Does anyone cycle to school? Ask them to use pictograms, bar graphs or pie charts to present their findings. Encourage them to add written comments to their work.




Online map sites can be used to plan and measure walking and cycling routes.

### 4b - How far do we walk?

This activity could be carried out online, using a web based mapping tool. Alternatively, you could carry this out with a print out map of the local area and coloured pins. This activity follows on from "How do we get to school?" Put the map of the local area on the wall (or a Google Map on your IWB). Ask the children to put a pin on the map to show where they live. Use different coloured pins, for children who walk, for bus travellers, those who come in their parents' car and those who share a car. Is there any clear pattern? Who walks the furthest? Is there a dangerous road in the way of some children who want to walk? Children could surround the map with comments about why people walk or ride. Perhaps follow this activity up by asking all the children to draw a map of their route to school.

### 4c - Why don't we all walk?

After investigating how everyone travels to school, organise a debate. Split the class into two teams of three or four and ask them to make up short speeches. One team has to say why it is good to walk or cycle to school; the other team has to say what the problems are. After their speeches, classmates can question them about what they have said. Everyone then has a vote on whether they think children should walk to school. You will, of course, have to remind the children that parents have to make the final decision on how they get to school.

### 4d - That's what I think!

You could now organise another class debate to discuss another air pollution issue. Choose an issue like saving energy or the number of children with asthma. You could use the posters as a starting point for the debate.


Find the posters at the end of this pack.

# Section 5

## What can I do?

**Most of our air pollution problems need national and international action to solve them, but we can all do our bit. If every person in the country wasted a bit less electricity or gas, walked short journeys instead of riding in a car, recycled more of the packaging they use, and thought more about how the things they buy are made, then that would be a big help.**

# Section 5 Activities

**5a - Read all about it!**
You may need to have done some further research online for information on air pollution to carry out this activity.

Having found out so much about air pollution and stories like the Great Smog, organise the class into groups to make up their own newspaper special report on pollution. There could be articles that give readers information about the causes of air pollution and what they can do to help cut it. There could be interviews with their classmates about what they think about air pollution. Or there could be advertisements for organisations that are trying to protect the environment. See the further resources page for ideas.

**5b - Share your healthy air**
The Healthy Air Campaign would love to share your healthy air work on our online blog. Ask the children to type out answers to the questions below (perhaps divide a class into groups to complete each section) based on one or more of the activities they carried out, including a photograph they have taken of one of the project activities. They then need to email the template to the address at the bottom. Some entries will be posted up to the Healthy Air blog.

## Share your Healthy Air!

Type answers to the following questions in an email, then send to the address at the bottom. We'd love to hear about your healthy air projects, and we'll share some of them on our Healthy Air Blog page**!**

**What's your school called and what class are you in?**

**Which Healthy Air projects did you do?**

**Could you write a paragraph about the most fun or interesting thing you learnt?**

**In no more than 20 words, what would you do to reduce air pollution?**

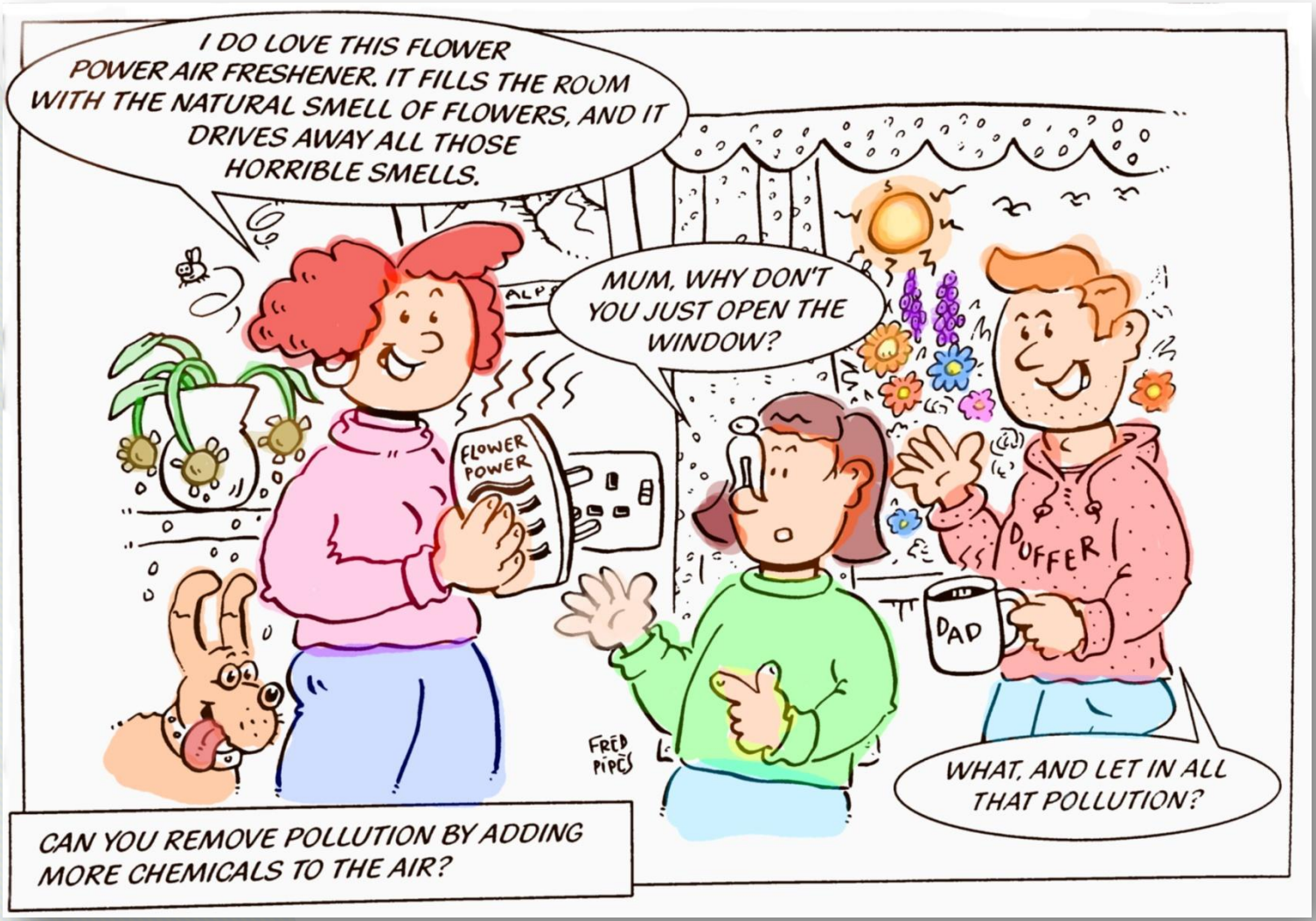
**Now take a photo of some of your project work (e.g. an ink drawing or your newspaper feature) and attach it to the email.**

Now send to the Healthy Air Campaign at this address: healthyairuk@gmail.com
Thanks for sharing your Healthy Air work! We'll read every entry and we'll share some on our blog.

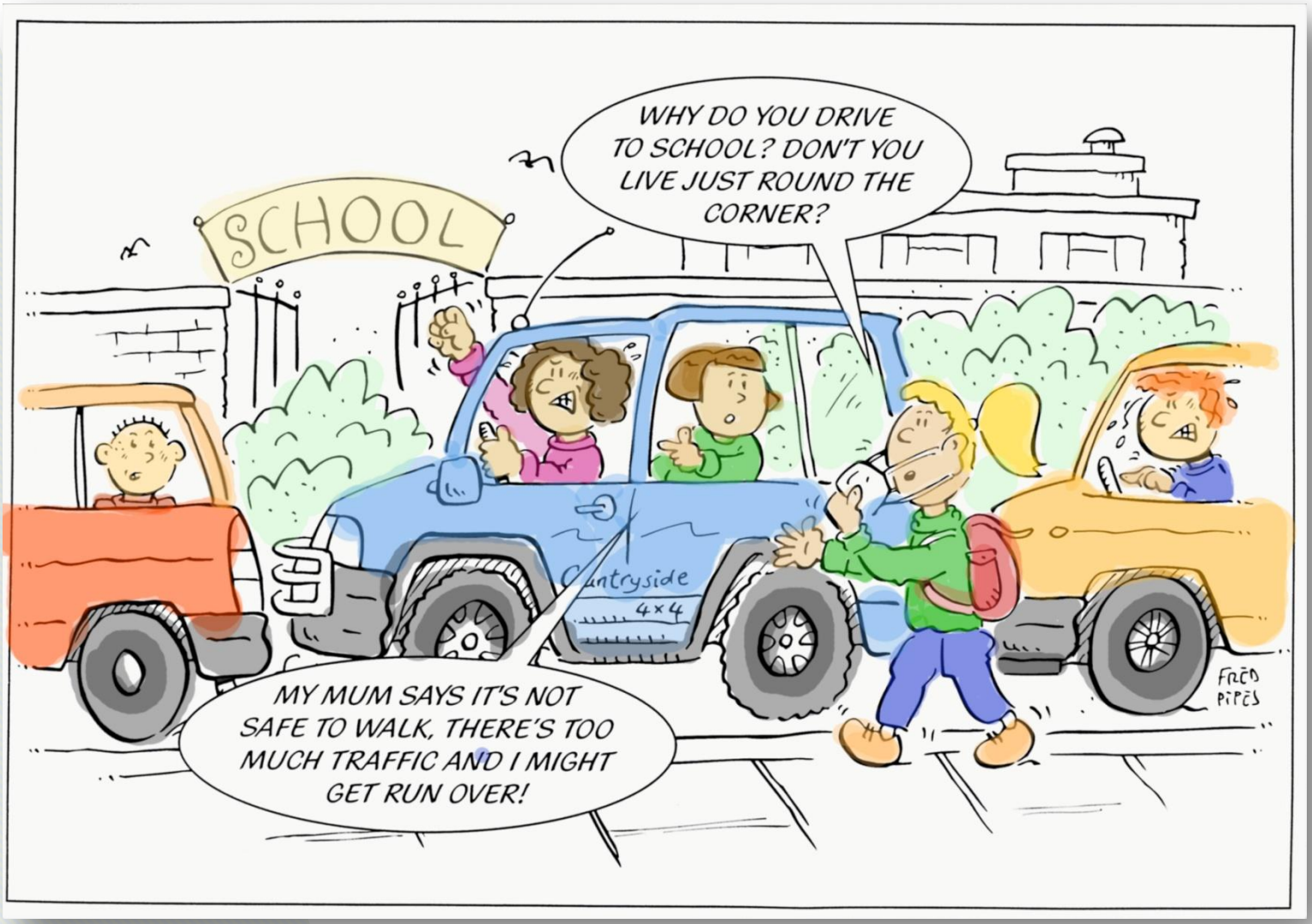
## Poster 1


WHAT'S IN YOUR AIR?
FACTORY
PHIL'S DODGY GARAGE
COAL
OIL
LANCS
COAL
FRESH FRUIT FROM NEW ZEALAND

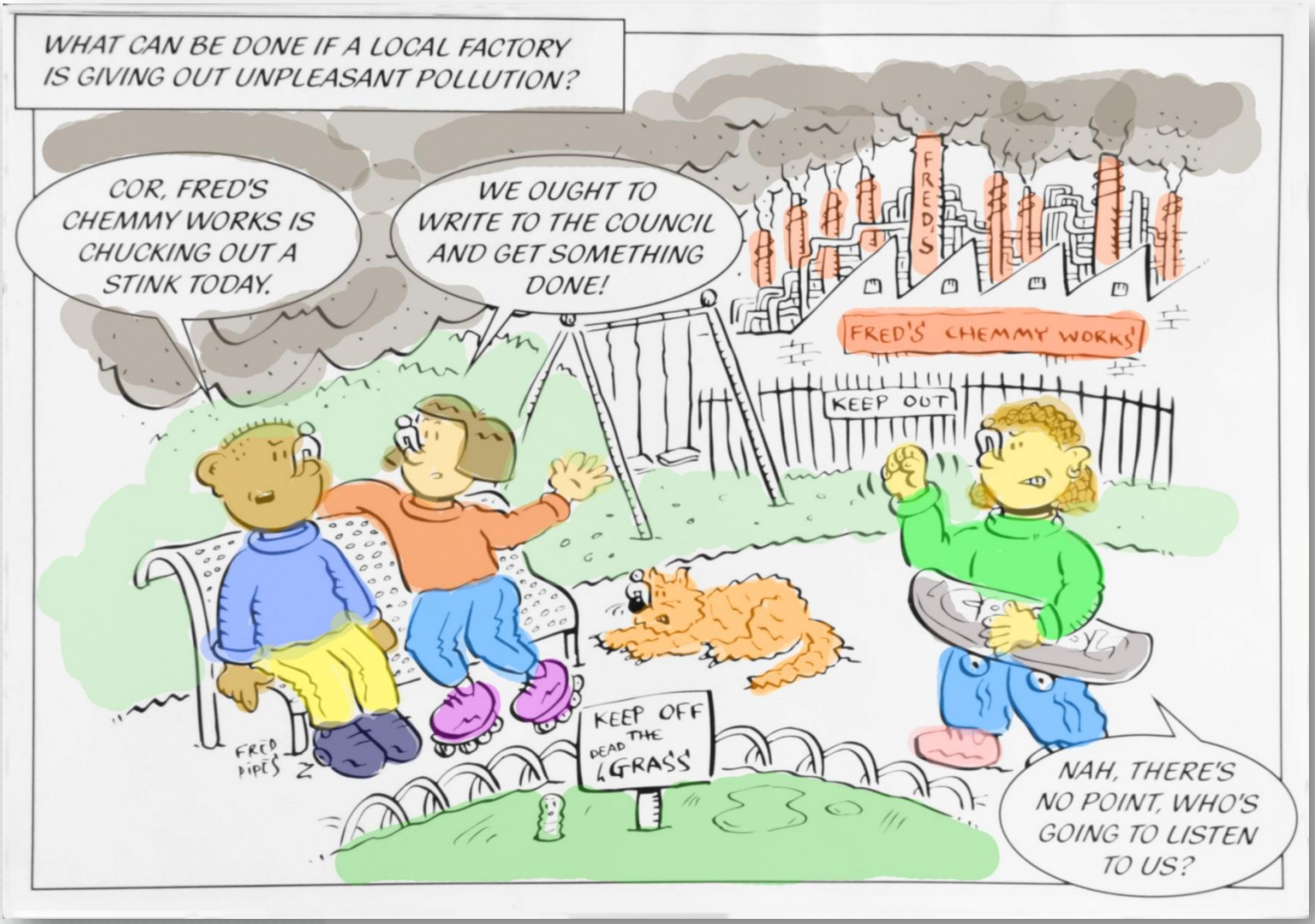
## Poster 2


I DO LOVE THIS FLOWER POWER AIR FRESHENER. IT FILLS THE ROOM WITH THE NATURAL SMELL OF FLOWERS, AND IT DRIVES AWAY ALL THOSE HORRIBLE SMELLS.
MUM, WHY DON'T YOU JUST OPEN THE WINDOW?
FLOWER POWER
DUFFER
DAD
WHAT, AND LET IN ALL THAT POLLUTION?
FRED PIPES
CAN YOU REMOVE POLLUTION BY ADDING MORE CHEMICALS TO THE AIR?

## Poster 3


SCHOOL
WHY DO YOU DRIVE TO SCHOOL? DON'T YOU LIVE JUST ROUND THE CORNER?
MY MUM SAYS IT'S NOT SAFE TO WALK, THERE'S TOO MUCH TRAFFIC AND I MIGHT GET RUN OVER!
Countryside
4×4
FRED PIPES

## Poster 4


WHAT CAN BE DONE IF A LOCAL FACTORY IS GIVING OUT UNPLEASANT POLLUTION?
COR, FRED'S CHEMMY WORKS IS CHUCKING OUT A STINK TODAY.
WE OUGHT TO WRITE TO THE COUNCIL AND GET SOMETHING DONE!
FRED'S
FRED'S CHEMMY WORKS
KEEP OUT
KEEP OFF THE DEAD GRASS
FRED PIPES
NAH, THERE'S NO POINT, WHO'S GOING TO LISTEN TO US?

# Further resources

**The Healthy Air Campaign:**
**www.healthyair.org.uk | Twitter @HealthyAirUK**
**(links to all campaign partner websites can be found on the Healthy Air website)**

**Department for Environment, Food and Rural Affairs:**
**http://www.defra.gov.uk/environment/quality/air/air-quality/**
**(will include links to Local Authorities that have declared Air Quality Management Areas)**

**Environmental Protection UK:**
**www.environmental-protection.org.uk**

**London Air Quality Network:**
**www.londonair.org.uk**

**The Met Office:**
**http://www.metoffice.gov.uk/education/teens/case-studies/great-smog**

**World Health Organisation:**
**http://www.who.int/topics/air_pollution/en**

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Environmental Protection UK would like to thank Claire Murphy, Head Teacher Chidham Parochial Primary School, for guidance on this revised edition

**The Healthy Air Campaign is tackling the public health crisis caused by air pollution. We aim to encourage behaviour that helps cut air pollution and exposure to it and persuade the government to take action so the UK fully complies with air quality laws.**

**www.healthyair.org.uk**

**The Healthy Air Campaign is supported by:**

environmental protection uk
sustrans JOIN THE MOVEMENT
asthma UK
Chartered Institute of Environmental Health
Clean Air in London
Campaign for Better Transport
LIVING STREETS PUTTING PEOPLE FIRST
ClientEarth Justice for the Planet
Friends of the Earth