



Mapping

Guidance: Cleaner Air Route Map project

This cross-curricular project can get across some important pollution and health messages in a really fun and engaging way. What's more, your low pollution route map can be put up as a banner on school gates, and put up on families' fridges at home, as a constant reminder of these vital messages.



Why do it?

Children are exposed to as much as 60% of their daily air pollution during the school run and while at school. That's because, whether they travel by bus, car, bike or on foot, they are likely to be travelling along roads with vehicles, and therefore pollution.

A really simple way to reduce the amount of pollution children breathe in every day is to ensure that they are always choosing quieter, low pollution routes to get to school, rather than busy roads with lots of pollution. Walking just one road back from a busy road can reduce your exposure by as much as 50%.

Project overview

This is a great project for a KS2 class or an Eco Team. After watching our Video class lesson about pollution, pupils think about what roads in their area might be more or less polluted.



After looking at a pollution map of their area, or undertaking some monitoring themselves (we have monitors we can loan to you), pupils will then help to create images for a map of the area, which will highlight the cleaner (and greener) roads in the area, and which polluted (and red) roads they should avoid.

Benefits

- Fun, cross-curricular project covering geography, art and science.
- Pupils can get involved in citizen science, measuring pollution levels on different routes to school.
- Long-lasting impact - your maps can be kept for years to come.
- Simple way to reduce pollution exposure every day.

Time requirements

- 4 hours Prep
- 3 hours delivery - lesson and monitoring
- 5 hours to produce the map.

Costs:

- Approx £40 for PVC banner
- Approx £80 for 450 stickers

3 Steps to cleaner air

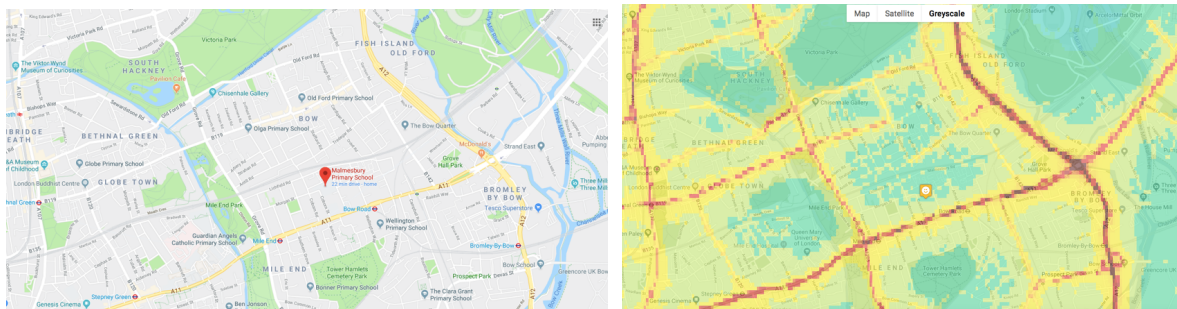
Here we take you through the three steps for this project, and explain what resources we have provided to make it simple for you.

Step	Resource
Step 1: Preparation	Pollution map of your area
Step 2: Creating the map	Borrow our 'wearable' pollution monitors Lesson video
Step 3: Evaluation	Superwalker stickers



Step 1: Preparation

- Choose which class / group to undertake this project with (best suited to: KS2 class / Eco Team)
- Prepare the resources for the lesson
- You will need to choose how big the area for your map will be (ideally at least as big as your catchment area) and then produce a map of that area (e.g. using google maps).
- Draw a giant version of the map for the class (at least a1 size).
- Find a way to compare busy and more polluted roads with quieter roads. This could be:
 - A pollution map of the area (search for your post code using Kings College London pollution map <http://www.londonair.org.uk/london/asp/annualmaps.asp>, or ask your local authority if outside of London).
 - If not, you could do vehicle counts for different roads in the area.
 - Or undertake your own monitoring using personal exposure monitors (contact us at info@cleanerairsooner.org to see if our monitors are available for loan).



Left: Google map of a school, and right: Pollution map of the school from LondonAir website

For the class, you will also need:

- Our Video Lesson
- Paper and pens for the drawings
- Personal exposure monitors (if using).

Step 2: Create the map

The lesson plan could entail:

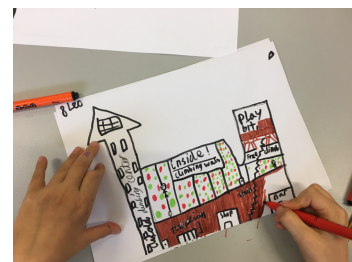
- At the start of the lesson, ask the children to draw on a map the route that they normally take to school, and what mode of transport. Some children may not be sure, so you may need to help them with this (10 mins).
- Show our Video lesson which will educate the pupils about pollution and mapping (15 mins).



- Ask the pupils to draw their favourite place in the map area (25 mins). A couple of volunteers could colour in the polluted roads red, and the cleaner roads green. You don't need to include every road in the area, but enough to give the children an idea of where they live, more or less.
- If you have personal exposure monitors, a few pupils could go out and do some monitoring to compare pollution levels on busier roads with quieter roads. You can show this to the rest of the class when you get back.

If you want a more professional look, you could see if there is a parent at the school with graphic design skills who would like to volunteer to help. Or if you have some PTA funding, you could pay a graphic designer / illustrator to do the work for you.

Select some of the children's drawings to go on the map. You could scan the pictures and shrink them to the correct size, if they are too large. Place the drawings on the map, and your pollution map for the kids created by the kids is ready.



Step 3: Disseminate and evaluate

To have an impact across the whole school, you could do some or all of the following:

- Arrange for the map to be printed onto a PVC banner (they cost around £40 each) which could then be put up at the school, to remind people of the cleaner routes message every day.
- A4 versions could be printed for families, and put in book bags for children to take home.
- Have a launch assembly (or lesson) telling the pupils about the project.



After the project has launched, you could survey the pupils again to find out what route they are taking to school. Are they now taking a cleaner air route than the one they mapped out in the class?

By comparing your post-project results with the baseline, you can see what impact your project has had. You could use our **'Superwalker' stickers** at registration every day one week, and any child that has walked a clean air route can have a superwalker sticker. Then you can count how many stickers you give out each day, as a record of how many pupils chose a clean air route that day.

For pupils who do not walk to school, you could ask them if they are choosing cleaner air routes for other journeys, such as to go to their friend's / family's house.



Now you can let us know you've completed the project, and we will send you a Clean Air In the Making certificate.



Additional messages for your map project

You may have some pupils who live on the busier, polluted red roads, and you will want to ensure they won't become anxious that they live on a very polluted road. You can offer some simple tips as part of this project.

If you live on one of the red polluted roads, you can reduce the amount of pollution you breathe by:

- *Only opening the windows at the back of your house / flat, and keeping the windows that look on to the main road closed as much as possible.*
- *Always choosing the greener roads when you walk around your local area, as much as you can.*

Resources to help with this project

For London schools:

This website has pollution maps of London, which you can use to find out which roads are more / less polluted.

<https://londonair.org.uk/london/asp/annualmaps.asp>

Type your school's postcode into the search box, and click the search icon.

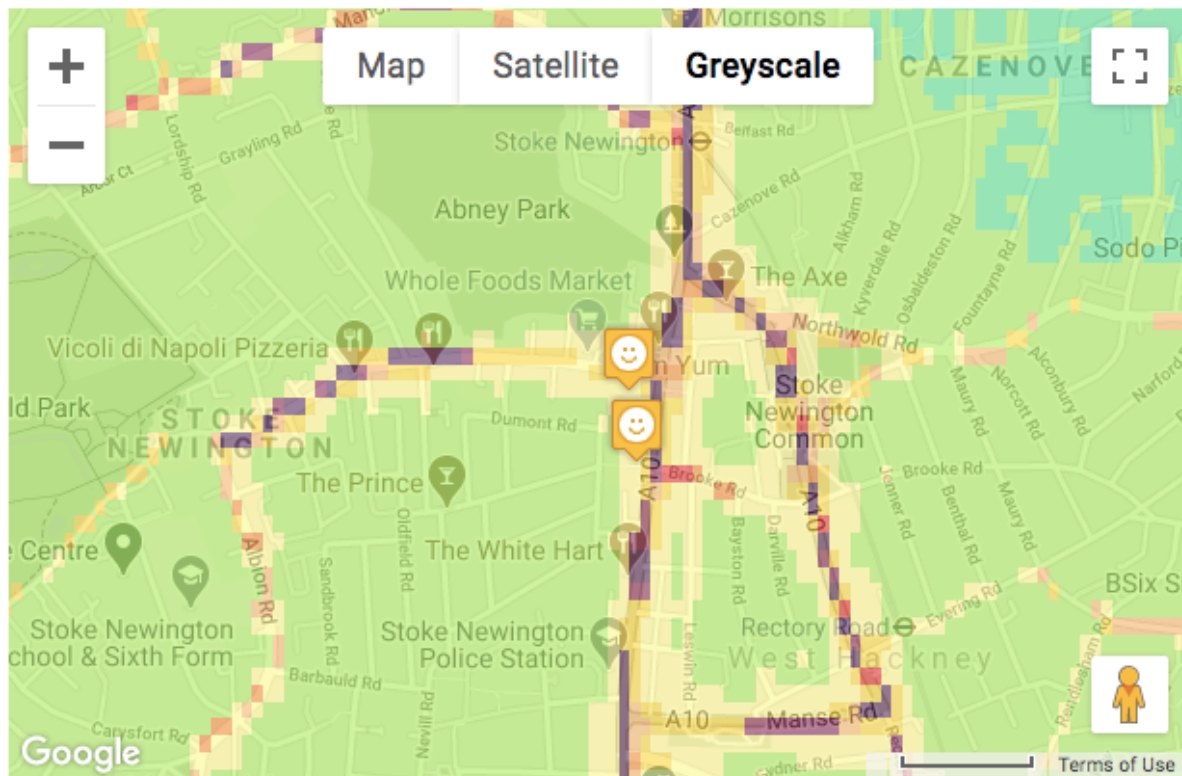
You can zoom in or out using the + - buttons top left of the map.

Annual Pollution Maps

N16 ONX



View Full Screen 



Key: Annual mean NO₂ air pollution for 2016, in microgrammes per metre cubed (ug/m³)



<16 16 19 22 25 28 31 34 37 40 43 46 49 52 55 >58

Passes annual mean objective

Fails annual mean objective

This key above explains the colour coding for the roads. Anything above 40 'fails the annual mean objective', but the simple message here is to **encourage pupils to take the greener roads, and avoid the redder roads.**

Greener roads = quieter roads and less pollution

Redder roads = busier and more pollution



GLA Clean Air Route Finder:

You could encourage all staff to use this tool to plot walking routes for journeys made out on foot out of the school grounds, such as school trips and walking to leisure centres for sports lessons.

<https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/clean-air-route-finder>

Air pollution monitors

If you are able to get hold of some air quality monitors, some pupils could undertake some 'citizen science' and monitor pollution levels on the different streets in the area. Places to ask for a loan of some monitors are:

- We have two real-time monitors which we will be loaning to schools, as part of this programme. Ask if they are free for you to use, by contacting xxx.
- Alternatively your local authority may have some
- Universities such as Kings College London sometimes loan them out

Research that supports why this project is worth doing

This research by Kings College London¹ inspired the creation of the first mapping projects in London at William Patten and Bow schools. The research involved hundreds of children wearing pollution monitors all day on their way to and from school. The findings revealed that:

- Pupils were exposed to on average five-times-higher concentrations of harmful nitrogen dioxide (NO₂) pollution on the school run than when they were at school.
- Children who walked to school by backstreets were exposed to the lowest levels of pollution.
- The highest concentrations were recorded by children walking along main roads.
- Pollution levels were higher in cars and buses than on back streets.

¹ Kings College London, 2019 <https://www.london.gov.uk/press-releases/mayoral/walking-to-school-on-back-streets-halves-pollution>