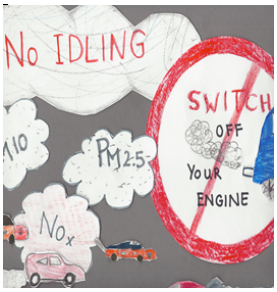
CLEAN AIR ZONES PILOT – THE LEARNING ENVIRONMENT

Engaging children with the air quality message and the greening installed is important to help them understand why the greening is there and to deliver behaviour change in the long term and reduce exposure in the interim.

WHAT COULD BE DONE?

- use the **Cleaner Air 4 Primary Schools Toolkit** to get lesson and activity ideas and develop them further e.g. traffic counts and surface wipes
- use the green infrastructure in the school to engage the children e.g. help with the planting and conduct an experiment to see which types of leaves are better at trapping particles

- project outputs to raise awareness for example: signage around the school ('no engine idling' and 'clean air garden' signs), animations and videos, newsletters, webpage development, plays, whole school assembly, air quality notice board, walking maps and air quality posters and leaflets



- whole class and whole of school workshops for the children to learn about the air quality message
- establish an 'eco-club' and 'air quality champions' in the school to keep the air quality messages and to help look after the greening once it has been installed

CASE STUDIES

BOTWELL HOUSE RC PRIMARY SCHOOL, HAYES

- **Cleaner Air 4 Primary Schools toolkit** - teachers used materials provided to ensure the children had an understanding of the importance of air quality. The children created posters, drew pictures and wrote poems about what they had learnt.
- **The Pollution Solution! workshop** - 6 interactive theatre workshops were run by the Big Wheel Theatre Company for Year 3, covering air pollution and climate change.
- **Planting Day** - about 50 children helped out on planting day, run by Groundwork. All the planting in the 'quiet area' was done on this day. They learnt about 'air quality' plants and herbs and worked on designs for 5 themed panels that were installed later in the planters.

- **The School Children's Council** have been involved in shaping the school and got involved in the project. We gave a presentation to the Council on air quality and what we were trying to achieve at the school. The children's Council were involved in the building audit and design of the 'quiet area'.

WHAT WAS THE OUTCOME: The children produced a wonderful junior assembly about air quality and the participation of the school in the Clean Air Zones project on the official open day for the 'quiet area'. This included a factual

presentation and a skit about the Mayor of London and the project. The school choir also sang a song about looking after environment. The fun filled theatre workshops showed what we could all do to improve air quality locally, suggested using good air quality routes and also how addressing air quality can have a positive impact on reducing carbon emissions and so help with climate change. The teachers and the children enjoyed themselves and gave very positive feedback about the workshops.

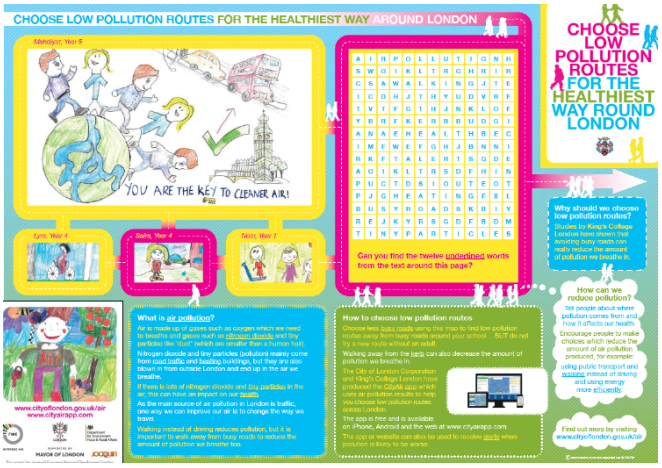
SIR JOHN CASS'S FOUNDATION PRIMARY SCHOOL, CITY OF LONDON

Over the course of the project various engagement programmes were implemented with the help of an external provider and a local volunteer group helped the pupils with 'air quality' planting.

- **Class engagement programme** - the year 6 class took part in a six week engagement programme where they found out about the causes and effects of air pollution, monitored air pollution around the school; investigated 'pollution loving/hating' lichen and produced no engine idling signs, air quality posters and webpages. Some work was presented at the leavers' assembly.
- **Workshop and project outputs** - all classes took part in air quality workshops where the pupils identified ways in which we can all reduce our 'air quality footprint'. Some classes followed with projects, including using the air quality monitoring results, writing articles and producing artwork for signs and a walking map. The project finished with a whole school assembly presented by nine air quality champions who prepared mini sketches, a short play and a song about air pollution.

- **eco club** – A year 4 eco-club was established and they learned about air pollution and monitoring in weekly sessions. They helped plant 170 air quality plants on the roof garden and in the playground with a local volunteer group.
- **Planting** – the pupils were actively encouraged to help with planting and looking after the 'air quality greening' by watering the plants during break-time. A 'green team' has been set up and the local volunteer group will continue to help the school with the care of the greening.

WHAT WAS THE OUTCOME: The children produced signs for around the school and a competition was run to design the artwork for a fold out walking map and a giant door sticker for the air quality monitoring station. The walking map explains how children can reduce their exposure by travelling via less busy roads. It also lets them know about the CityAir app which uses real time air quality data to show low pollution routes. The school are kept informed about the air quality in the area via termly reports and receive alerts when pollution levels are moderate or above.



OXFORD GARDENS SCHOOL AND ST CUTHBERTS WITH ST MATTHIAS, KENSINGTON AND CHELSEA

- **Education programme** - An education programme was designed for each schools' curriculum requirements using the Cleaner Air for Primary Schools toolkit and the Healthy Air education toolkit. Air pollutants NO_2, PM_{10} and $PM_{2.5}$ were highlighted in teaching sessions and practical exercises.

- **Practical Experiments** - *NO_2 diffusion tube s* deployment was undertaken as a practical exercise with each class followed by the collection of tubes and analysis of results. Sample location maps were created and graphs of results used to demonstrate changes in NO_2 in the local environment. *A surface wipe test* experiment was undertaken to demonstrate PM_{10} and $PM_{2.5}$ air pollution. The exercise was used to demonstrate the difference between roadside locations and locations away from the roadside. A traffic count was undertaken to demonstrate the volume of traffic along the busy road outside the school and the different types of vehicles contributing the poor air quality.
- **Monitoring station Installation** – To facilitate the schools teaching programme and further the understanding of the effectiveness of green screens to reduce local air pollution , at St Cuthberts with St Matthias school, a temporary (12 months) air quality monitoring station was installed. Continuous NOx and PM_{10} monitors positioned either side of a green screen located between the school playground and busy roadside location. Results from the monitoring station were used in teaching sessions to demonstrate how effective the green screens were at reducing NO_2 and PM levels in the school playground environment.

- **Animation/film creation** - Each class held a brainstorming session on air pollution and were given the task to create drawings about the sources and impact of air pollution on their health. The children then used their drawings to create a story board and create a script for their animation/ film. Sessions were held with the children and a team of animators to create the animation/film.
- **Gardening Sessions** - Existing gardening sessions run at St Cuthbert with St Matthias school used the green screen installation to carry on a legacy of air pollution teaching in the school after the education programme came to an end.

WHAT WAS THE OUTCOME: During the teaching sessions children made no idling engine posters to place outside of school along the busy road locations. Children also produced maps of low pollution walking routes to school using Walk-it.com. The final animation/film was premiered at the end of project school assembly. The classes led on presenting a summary of their work and showing their animation/film to the rest of the school, parents, governors and councillors. The animations were uploaded to You Tube and the Royal Borough of Kensington and Chelsea website. Gardening sessions at St Cuthbert with St Matthias school carried on the legacy of air pollution teaching by using the green screen installation as an example of how planting can improve local air quality. A research poster and paper were written using the results from the air quality monitoring station. Results were presented at the Monitoring Ambient Air 2014 conference. An article was also published in the Air Quality Bulletin Oct 2014. Links to You Tube animation/films can be found on the Schools Projects link:
http://www.rbkc.gov.uk/environmentandtransport/airquality/airqualityprojects.aspx

Green wall for London school

St Cuthbert with St Matthias School in the Royal Borough of Kensington and Chelsea has held a special assembly to celebrate the installation of a living green screen, made up of ivy, clematis, jasmine and lonicera.

The green wall aims to "significantly" reduce the pupils' exposure, whilst at school, to nitrogen dioxide and particulate matter vehicle pollution at the roadside location in Earl's Court. King's College London is monitoring air quality at the site (inset).

An air quality education programme has seen pupils from year six map their lowest pollution routes to school, create images for no-idling engine posters and script and produce an animated film. To see the film go to http://youtu.be/T4kpqIIYBNI

AIR QUALITY BULLETIN October 2014

Do's	*&*	*Don'ts*
☑ meet the school needs by engaging with staff to see what the priorities are ☑ ensure the school understands the commitment required and establish a Letter of Agreement, which the teacher(s) and school sign ☑ do work with partner organisations who are already involved with schools and already know what works and is required ☑ have a single point of contact at the school to champion the project ☑ highlight how air quality fits across the curriculum: maths, sciences, geography, English, social studies, art and design ☑ use existing materials e.g. Cleaner Air 4 Primary Schools Toolkit, creating a comprehensive plan in advance ☑ be aware of holidays and activities at the school before agreeing timeframes ☑ establish early on with the school how the education programme will fit in with their curriculum requirements and schedule ☑ ensure the teachers are engaged with and informed of the education programme lesson plans, exercises and practical session ☑ provide teachers with information pack on air quality issues ☑ ensure that you have teachers assistance with the handing out and collection of homework and worksheets ☑ schedule the dates for the education programme to start and try to ensure that the sessions take place during similar school themes such as environment week, geography week etc. ☑ do book in use of school halls for assemblies early on and ensure time is made available to practice the assembly ☑ if using educational delivery agents, work with them to design the educational programme ensuring lessons plans, exercises and practical experiments are suitable for the air pollution educational programme and undertake regular updates and progress meetings		☒ Do not leave it too late to contact the school. Ideally contact the school well before the new school year so the engagement can be programmed ☒ Do not overwhelm teachers with work or tasks. Keep the messages simple ☒ Do not forget to keep the school and teachers updated on the progress of the educational programme ☒ Do not forget to work with the school to publicise the programme through the school website and any school/governors newsletter to reach a wider audience/community ☒ Do not forget to send event and assembly invites early to parents, school and parent governors and where possible provide incentives such as 'freebies' to ensure they attend so as to spread the messages ☒ Do not forget to record each stage of the project, through written summaries, videos footage, photographs etc. but get school and parent/carer permissions for the use of photos etc. ☒ Do not forget that teachers are REALLY busy and so don't worry if some teachers do not want to be involved. It is better to work with teachers who have time and can commit ☒ Do not forget pre and post leaning evaluation sheets to understand what the children have learnt and what, if any behaviour change has occurred ☒ Don't forget copyright issues for materials produced on behalf of the school. Be sure the matters are finalised are agreed before proceeding