Ricardo-AEA

Scottish Government Clear the Air Educational Programme

Scottish Air Quality Database and Website Annual Seminar
26th March 2015

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Clear the Air

- An educational air quality resource for 12-15 years olds
- It provides a learning repository with information on:
  - Pollutants
  - Sources
  - Impacts
  - Actions
- A coordinated citizen science study supported by narrated webinars.

Program Aims

- Raise awareness of air pollution within secondary school age pupils
- Provide ‘hands on’ experience of air quality monitoring and assessment
- Develop an interest and awareness in science and technology
- Encourage behaviour change – “what can I do?”

Our Approach

1. Develop an air quality educational programme in partnership with a pilot school and supporting local authority

2. Provide training on air quality, monitoring, impact and linking to sustainable actions

3. Develop an online resource which provides information on:
   - Air Quality
   - Emissions
   - Health Impact
   - Sustainable Travel Options (Including Emissions Calculator)
   - Research Exercise (Citizen Science)

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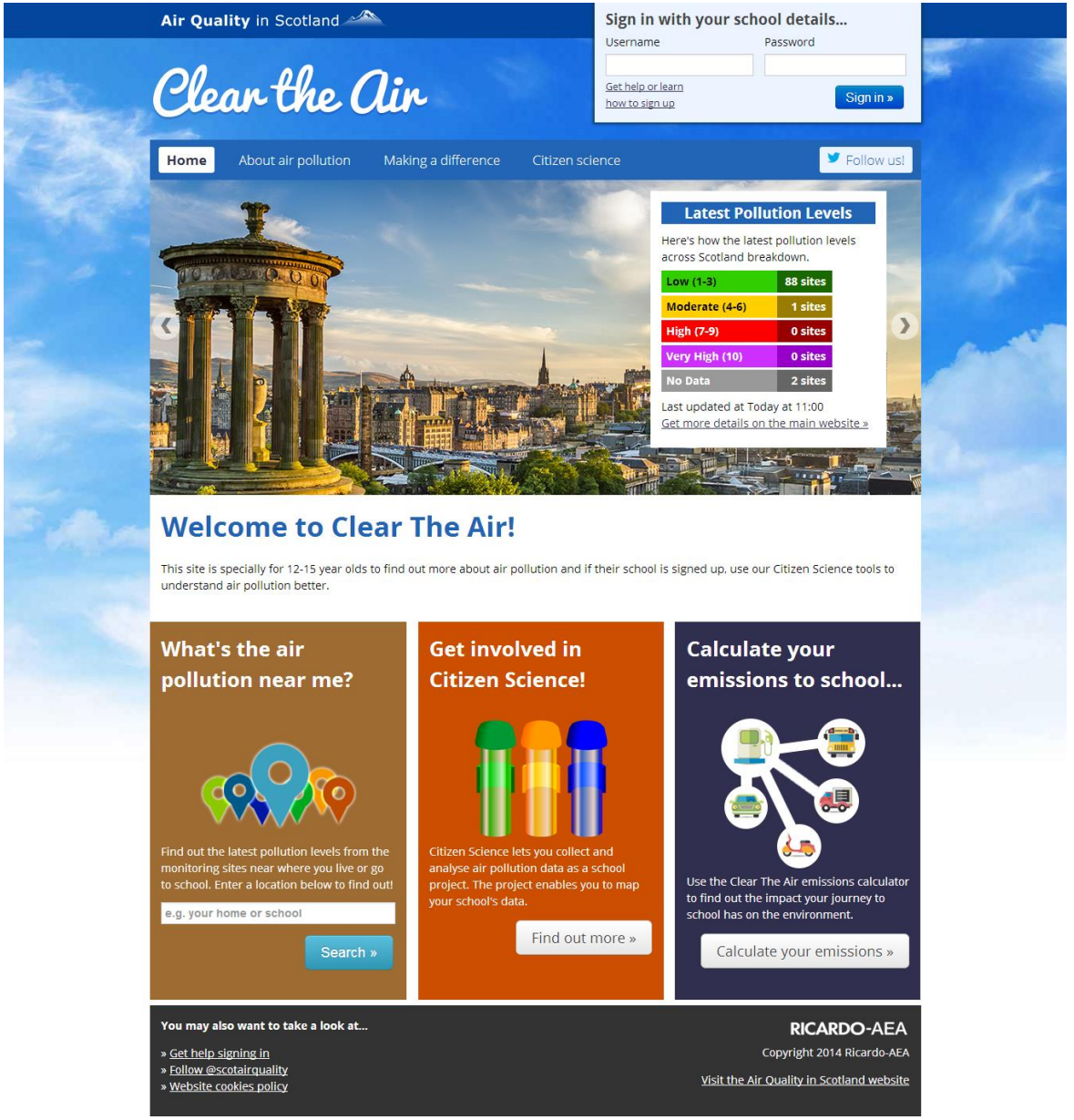

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Welcome to Clear The Air!

This site is specially for 12-15 year olds to find out more about air pollution and if their school is signed up, use our Citizen Science tools to understand air pollution better.

What's air pollution like near me?

Find out the latest pollution levels from the monitoring sites near where you live or go to school. Enter a location below to find out!

e.g. your home or school

Search »

Get involved in Citizen Science!

Citizen Science lets you collect and analyse air pollution data as a school project. The project enables you to map your school's data.

Find out more »

Calculate your emissions to school...

Use the Clear The Air emissions calculator to find out the impact your journey to school has on the environment.

Calculate your emissions »

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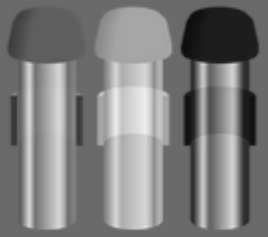

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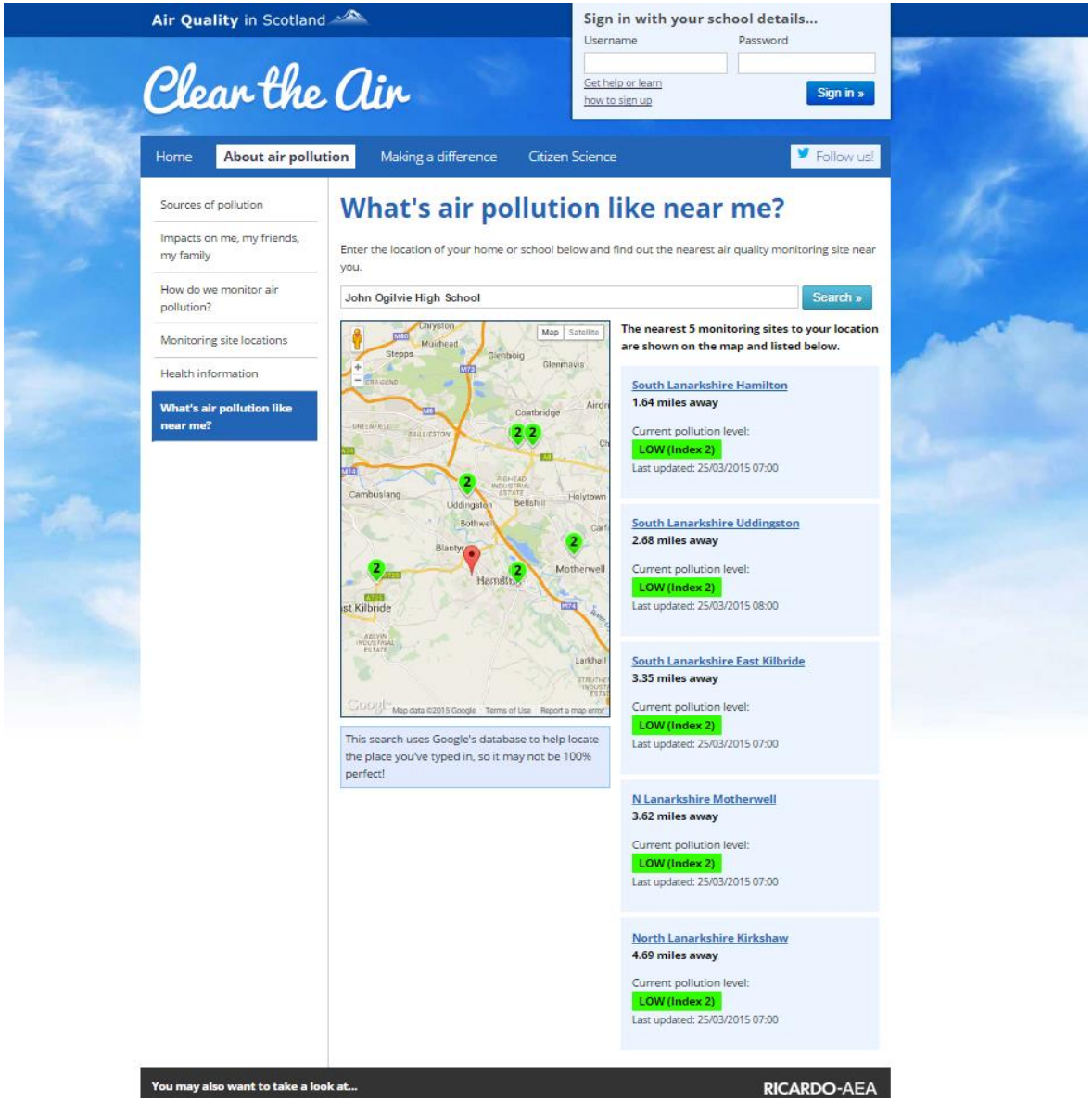

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- Sources of pollution
- Impacts on me, my friends, my family
- How do we monitor air pollution?
- Monitoring site locations
- Health information
- **What's air pollution like near me?**

What's air pollution like near me?

Enter the location of your home or school below and find out the nearest air quality monitoring site near you.

John Ogilvie High School | Search »

This search uses Google's database to help locate the place you've typed in, so it may not be 100% perfect!

The nearest 5 monitoring sites to your location are shown on the map and listed below.

South Lanarkshire Hamilton
1.64 miles away
Current pollution level:
LOW (Index 2)
Last updated: 25/03/2015 07:00

South Lanarkshire Uddingston
2.68 miles away
Current pollution level:
LOW (Index 2)
Last updated: 25/03/2015 08:00

South Lanarkshire East Kilbride
3.35 miles away
Current pollution level:
LOW (Index 2)
Last updated: 25/03/2015 07:00

N Lanarkshire Motherwell
3.62 miles away
Current pollution level:
LOW (Index 2)
Last updated: 25/03/2015 07:00

North Lanarkshire Kirkshaw
4.69 miles away
Current pollution level:
LOW (Index 2)
Last updated: 25/03/2015 07:00

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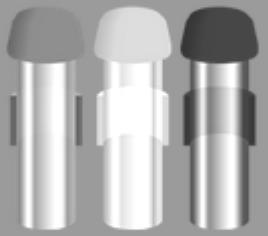

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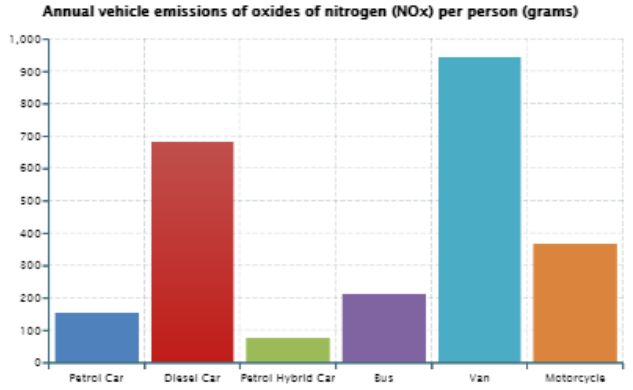
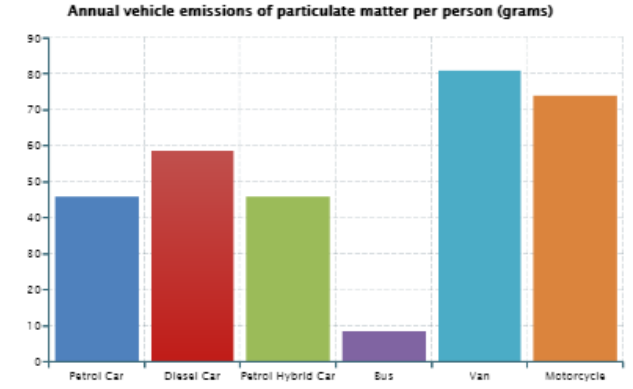
Your calculated emissions for a Diesel Car!

NOx	684 g	PM_{10}	59 g
Annual vehicle emissions of oxides of nitrogen (NOx) per person		Annual vehicle emissions of particulate matter, per person	

» Read how we calculate this, and the assumptions made

Compare your journey with different vehicles





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The Pilot Scheme

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Several schools involved in the pilot scheme

East Dunbartonshire

South Lanarkshire

Two Different Groups

Mixed ability 1st year group “Litter Busters”

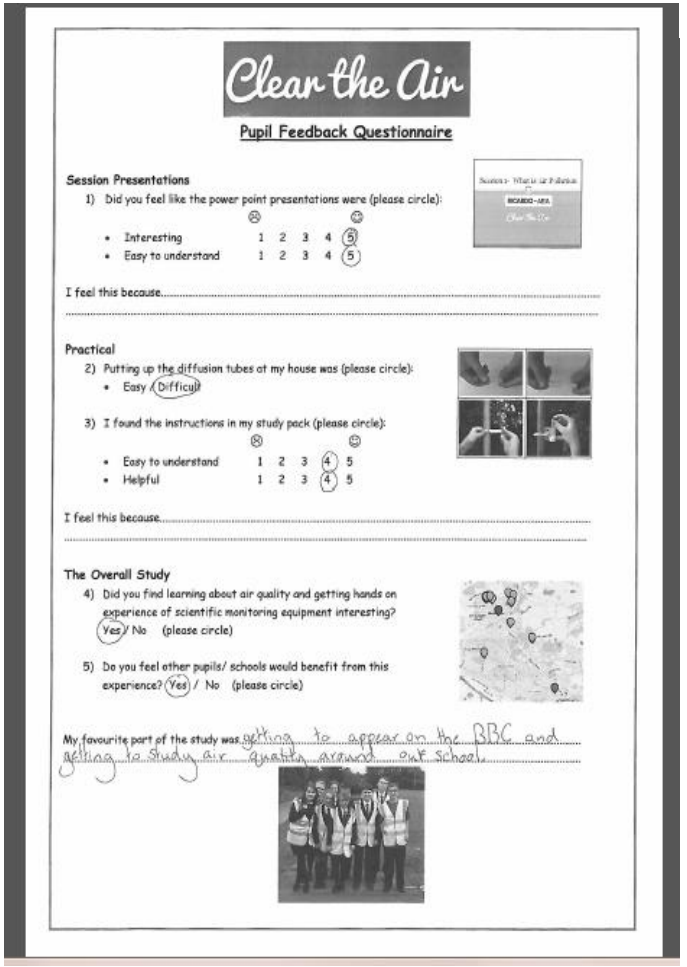
2nd year Chemistry Class – mixed ability

The Pilot Scheme

- Raise awareness of air pollution within secondary school age pupils
- Undertake short-term monitoring using diffusion tubes to observe changes in NO_2 concentrations at various locations around the school
- Provide all pupils with a pupil pack with instructions for diffusion tube deployment at home
- Provide the pupils with the results of the analysed tubes so they may input the data into their schools webpage
- Undertake an interpretation and conclusions session with pupils to encourage them to work out what factors may be influencing the concentrations recorded.

Feedback

- Questionnaires were given to each pupil who took part and the teachers
- Feedback has been extremely positive from both teachers and pupils
- Deputy Head Teacher
  - more activities could be built in
  - Use the data to provide help with graphs, pie charts etc



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Pupil Feedback Questionnaire

Session Presentations

1) Did you feel like the power point presentations were (please circle):

- Interesting 1 2 3 4 (5)
- Easy to understand 1 2 3 4 (5)

I feel this because.....

Practical

2) Putting up the diffusion tubes at my house was (please circle):
- Easy / (Difficult)

3) I found the instructions in my study pack (please circle):
- Easy to understand 1 2 3 (4) 5
- Helpful 1 2 3 (4) 5

I feel this because.....

The Overall Study

4) Did you find learning about air quality and getting hands on experience of scientific monitoring equipment interesting? (Yes) / No (please circle)

5) Do you feel other pupils/ schools would benefit from this experience? (Yes) / No (please circle)

My favourite part of the study was getting to appear on the BBC and getting to study air quality around our school

Interest from the Media

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BBC Sign in | News | Sport | Weather | iPlayer | TV | Radio

NEWS

Home | UK | World | Business | Politics | Tech | Science | Health | Education | Entertainmer

Scotland | Scotland Politics | Scotland Business | Edinburgh, Fife & East | Glasgow & West | Hi

The kids are fuming: Pupils track pollution on the school run

8 August 2014 | Scotland

Pupils at a Glasgow school have joined forces with pollution analysts to measure the effect of the school run on air quality. BBC Scotland's health correspondent Eleanor Bradford spent an afternoon with them.

http://www.bbc.co.uk/news/uk-scotland-28697096

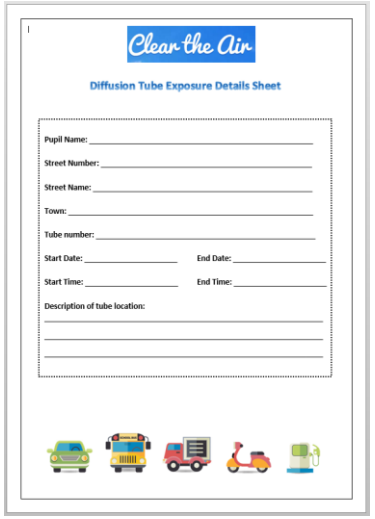
Interest from the Media

Clear the Air Educational Programme

- 4 Narrated Webinar Sessions

- Teachers Pack
  - provides the teacher with information on:
    - The Clear the Air Education Programme
    - Air Quality and Pollutants
    - Webinar Session information

- Pupil Pack
  - Diffusion Tube Deployment Instructions
  - Home Exposure Detail Sheet
  - Diffusion Tube Checklist



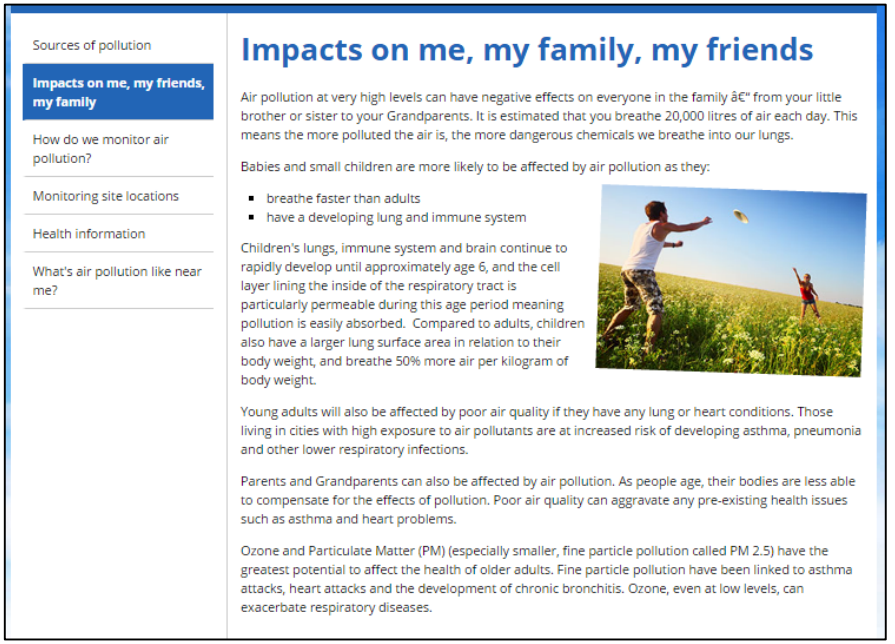
Webinar Session 1

Introduction to Clear the Air and Air Quality Issues

- Introduction to Clear the Air and the website

- Discusses:
  - What is air pollution?
  - What are the main pollutants?
  - What are the sources of pollution?
  - Impacts of air pollution on both the environment and health

- Emissions Calculator



Webinar Session 2

Air Quality Monitoring

- How Air Quality Is Monitored
- Overview Of Automatic Monitoring Methods
- Overview Of Non-automatic Monitoring Methods
- Introduction To The Monitoring Study

Webinar Session 3

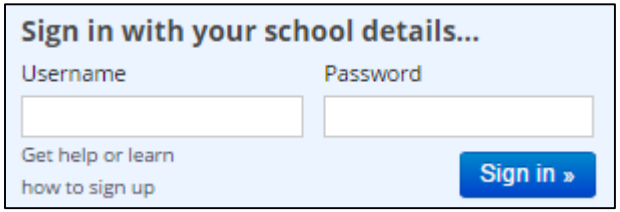
Diffusion Tube Deployment and Pupil Pack Handout

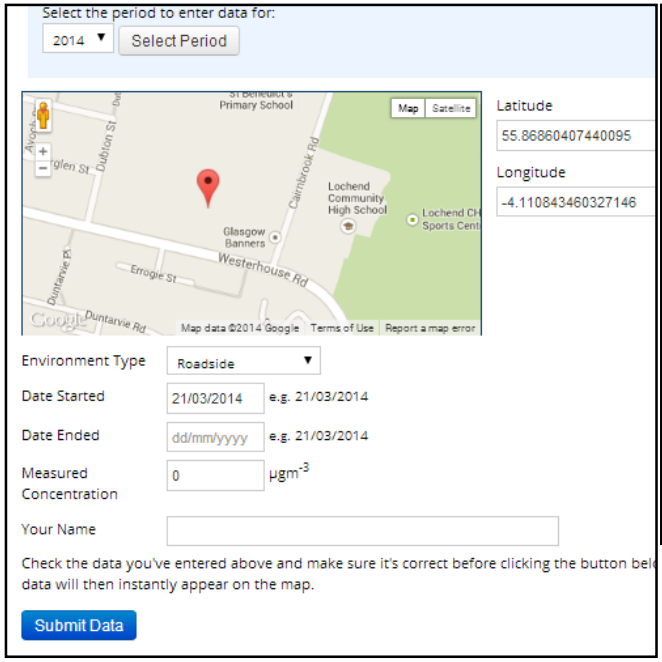
- Instructions on how to deploy the diffusion tubes for sampling
- Deploy school diffusion tubes
- Pupil pack hand out

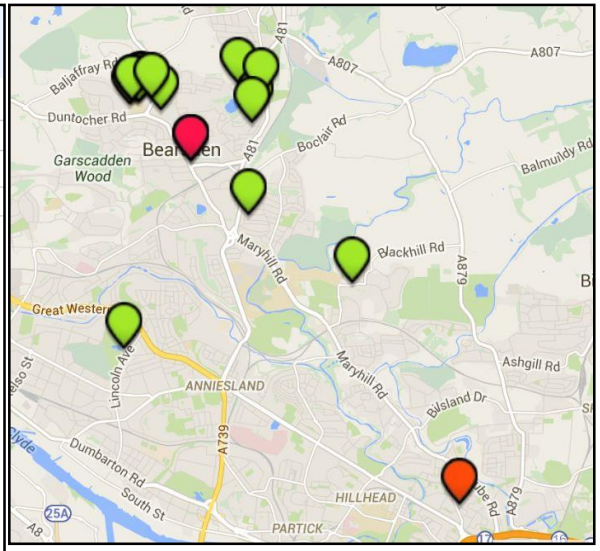
Webinar Session 4

Results and Discussion

- Dedicated school login
  - Allows pupils to input their diffusion tube data
- Discussion of results
  - What factors could be may be influencing the concentrations recorded?
- Potential to have all participating groups monitored results visible







Clear the Air and the School Curriculum

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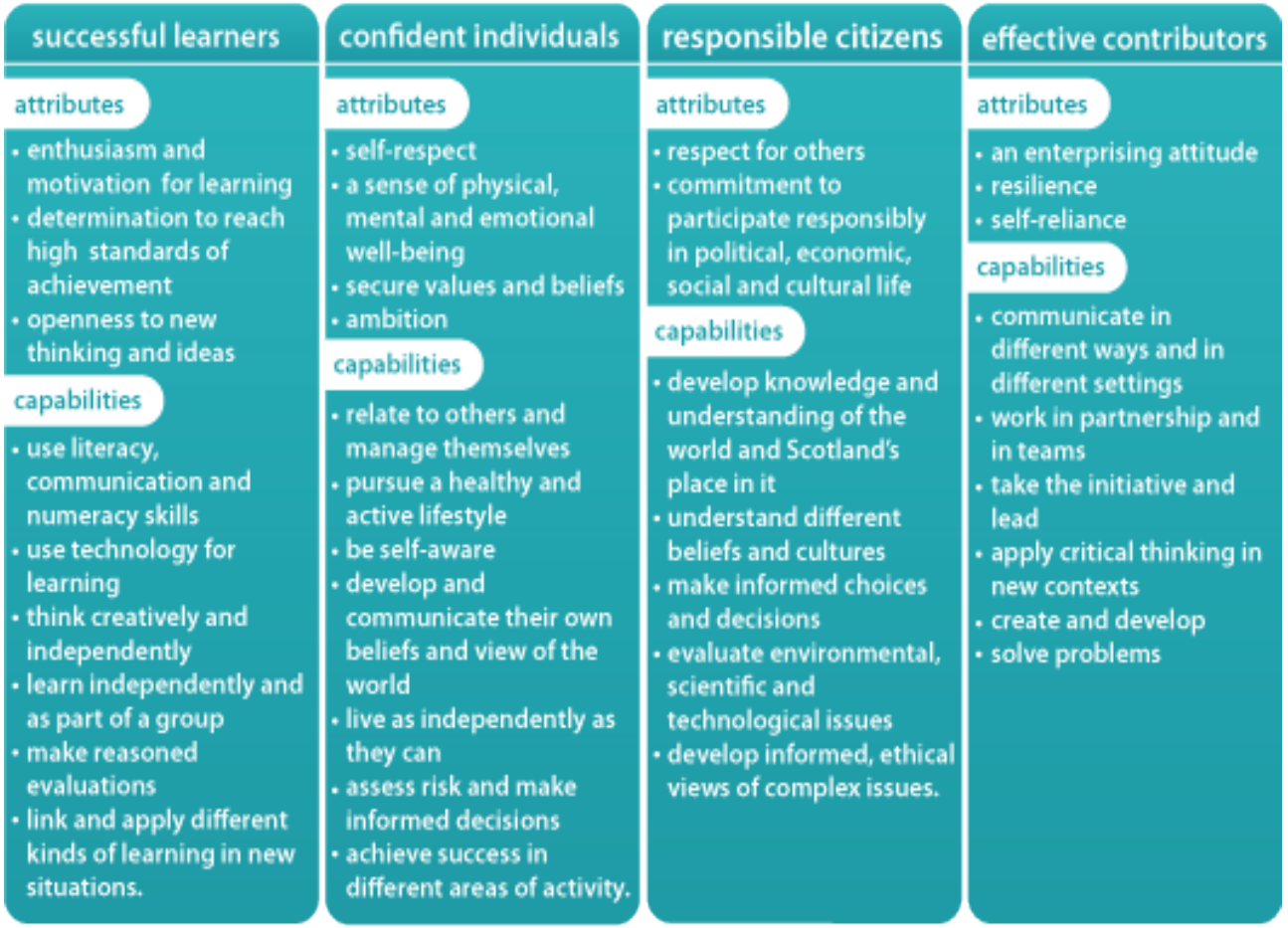

successful learners

attributes

- enthusiasm and motivation for learning
- determination to reach high standards of achievement
- openness to new thinking and ideas

capabilities

- use literacy, communication and numeracy skills
- use technology for learning
- think creatively and independently
- learn independently and as part of a group
- make reasoned evaluations
- link and apply different kinds of learning in new situations.

confident individuals

attributes

- self-respect
- a sense of physical, mental and emotional well-being
- secure values and beliefs
- ambition

capabilities

- relate to others and manage themselves
- pursue a healthy and active lifestyle
- be self-aware
- develop and communicate their own beliefs and view of the world
- live as independently as they can
- assess risk and make informed decisions
- achieve success in different areas of activity.

responsible citizens

attributes

- respect for others
- commitment to participate responsibly in political, economic, social and cultural life

capabilities

- develop knowledge and understanding of the world and Scotland's place in it
- understand different beliefs and cultures
- make informed choices and decisions
- evaluate environmental, scientific and technological issues
- develop informed, ethical views of complex issues.

effective contributors

attributes

- an enterprising attitude
- resilience
- self-reliance

capabilities

- communicate in different ways and in different settings
- work in partnership and in teams
- take the initiative and lead
- apply critical thinking in new contexts
- create and develop
- solve problems

Interest in the Clear the Air Educational Programme

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Thank you for listening

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