

City Challenge Report Card CC1			
The City Challenge Theme		City Challenge 5: Mobility Patterns that Support Community Development	
School/Summer School		Drimnagh Castle	Teacher(s) / Disciplines 2 Teachers, 23 students
The planning phase	Problem (The What-question)	Students decided to investigate traffic-related pollution levels at their school.	
	Relevance (The Why question)	The school is located on the very busy Long Mile Road in Dublin City, however the school grounds contain a lot of trees and vegetation.	
	Expectation / Hypothesis	Students thought that the levels of air pollution would be high	
	Methods (The How-question ¹)	The Transition Year students installed 6 nitrogen dioxide tubes within the school grounds, a playground and a community centre.	
	Participants ² (The Who-question)	23 students 15-16 years old	
The implementation phase³	Activity 1 (e.g. literature, book review)	Learn and research the topic of air pollution	
	Activity 2 (e.g. gather data / information)	Draw a map of the school and surrounding community	
	Activity 3	Install 6 nitrogen dioxide monitoring tubes in the local area and leave up for 4-weeks	
	Activity 4	The students carried out traffic surveys close to where many of the tubes were situated. They inputted their results into a spreadsheet and	



¹ Please provide the keywords regarding both, the teaching approach and the research approach

² E.g. the science team members

³ Please provide support if possible through pictures, sketches, charts, student reflection or such

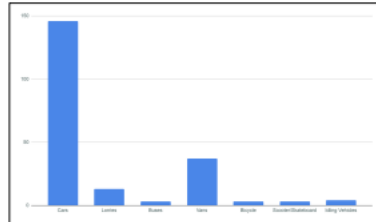
constructed graphs.

Results

The following charts and tables describe statistics gathered from our traffic surveys:

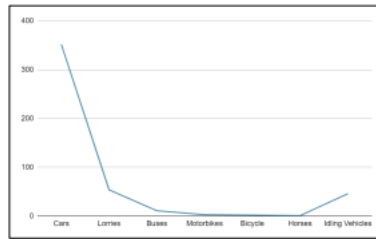
Location: Main Gate **06/11/2020** **Time: 12:01 - 12:21**

Cars	Lorries	Buses	Vans	Bicycle	Scooter/Skateboard	Idling Vehicles
146	13	3	37	3	3	4



Location: Long Mile Road outside EuroCycles **06/11/2020**

Cars	Lorries	Buses	Motorbikes	Bicycle	Horses	Idling Vehicles
352	54	11	3	2	1	46



Location: Assumption **06/11/2020**

Cars	Lorries	Buses	Vans	Bicycle	Scooter/Skateboard	Idling Vehicles
139	15	3	24	4	2	1

Activity 5

Send tubes to laboratory and receive results

Sample Results

The results of our NO₂ investigation arrived on the 20th of January 2021.

From our sample results, we can conclude that our average level of nitrogen dioxide is in the 'medium' category according to the concentration scale given in Figure VI. The lowest reading was from Sample 6 and it recorded an average of 15.50 µg/m³. Our highest concentration level was from Sample 3 and it reported 32.41 µg/m³. These results were among the highest levels of the schools listed in the program.

µg/m ³	Colour Code	NO ₂ Level Description
50+	Black	Very High
40-50	Red	High
30-40	Orange	Medium to High
20-30	Yellow	Medium
10-20	Green	Low to Medium
0-10	Blue	Low

Scale approval is pending.

Figure VI: (via The GLOBE Program, 2021)

Sample Results Table:

Sample	Concentration of NO ₂	Latitude	Longitude
Sample 1	27.39 µg/m ³	53.32421	-6.33442
Sample 2	20.75 µg/m ³	53.32063	-6.33382
Sample 3	32.41 µg/m ³	-	-
Sample 4	27.41 µg/m ³	-	-
Sample 5	17.22 µg/m ³	-	-
Sample 6	15.50 µg/m ³	53.32598	-6.33203

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	City Challenge solution	<p>From the results shown above, we were among the highest NO2 levels of schools listed in the Globe Program.</p> <p>The conclusion was reached that we have to bring these NO2 levels down or it will cause many health issues to the surrounding people who are living there and also to the schools. We can do this by spreading these results to the community and asking their help to reduce the NO2 levels by walking, cycling or travelling by bus. This will surely reduce these levels, to spread this information we could create posters, flyers and videos.</p> <p>We can do follow-up research in the near future and see how much the results have gone down. We can then compare and contrast these results.</p>
The documentation and reporting phase	Group or class (e.g. reports, posters etc)	PowerPoint Presentation (pulchra-schools.eu)
	School (e.g. school web page, school newspaper)	
	Public (e.g. meeting, news media)	The students presented their results at a PULCHRA online event in 2021

Room for additional explanations (some feedbacks on main problems found and related solutions, other observations are very appreciated)
