



Welcome to the 4th GLOBE Air Quality Campaign!



Dear GLOBE teachers and citizen scientists,

While Ireland's overall air quality is generally good by international standards it is now apparent that local air quality may not be as consistently good. It is now considered that any level of air pollution is not acceptable and poses a risk ([World Health Organisation](#)). There are often wide variations in local air quality going undetected that can have significant impacts on the health and wellbeing of local communities, so we want you to investigate the quality of the air around your school!

This project is coordinated by the GLOBE Team (Ireland), as part of The Environmental Education Unit (EEU) of An Taisce. GLOBE provides students and the public worldwide with the opportunity to participate in citizen science and contribute meaningfully to our understanding of the Earth system and global environment. There are many ways to participate in GLOBE. For more information about GLOBE, visit:

[About GLOBE](#)

[Registration for Teachers.](#)

There are many ways to participate in GLOBE, opportunities exist across multiple areas of Earth and Environmental Sciences – Atmosphere, Biosphere, Pedosphere and Hydrosphere. There are also a series of GLOBE [educational measurement campaigns](#) that teachers and their students can participate in.

EXPLORE AND LEARN ABOUT THE EARTH SYSTEM



The GLOBE Ireland programme supports an Air Quality campaign and several GLOBE designated biosphere and atmosphere protocols. The GLOBE Air Quality Campaign is a citizen science project to assess traffic-related air pollution at schools. This is an educational project designed to raise awareness about air pollution and showcase the potential of citizen science to gather unique datasets and insights into our environment. To date, 68 schools have participated in the GLOBE Air Quality campaigns, collecting over 230 nitrogen dioxide measurements. The campaign provides a collaborative platform for schools to share their research and insights.

We want this investigation to be empowering. We will **invite you to share your findings and solutions** by creating either a research poster, a report or a video showing your results and interpretation of your local traffic-related air quality. This can be shared with the GLOBE Team at the end of the campaign period.

This project is funded by the Irish Environmental Protection Agency (EPA). The EEU of An Taisce, the GLOBE programme and the EPA are partnering to encourage greater understanding and involvement of the public in air quality issues.

In Ireland, the EPA is responsible for monitoring outdoor air quality. Together with local authorities, the EPA manages a national network of monitoring stations that is being greatly expanded, with the aim of providing ongoing [air quality data](#) and forecasts to the public. You can find more information about the EPA at www.epa.ie and to find out more about citizen science initiatives in Ireland, please visit: www.epacitizenscience.ie.

This booklet is designed to support teachers in the implementation of the GLOBE Air Quality Campaign with their class. If you need any help during the investigation, please email Aileen Bright (abright@eeu.antaisce.org).

We wish you all a good journey and look forward to working with you!

Overview of Air Quality Campaign

In October, students across Ireland will measure nitrogen dioxide (NO₂) - a principal pollutant from car exhaust emissions - at three locations around their schools. Schools will be provided with the necessary equipment and guidance to carry out nitrogen dioxide measurements.

The main purposes of the campaign are to:

- Raise awareness about air pollution through a practical investigation
- Collect accurate data that can be used in students' research projects
- Share knowledge with school communities
- Complement official air quality monitoring performed by the EPA on local air quality

GLOBE Air Quality Campaign Timeline

Phase	Activity	Time
Getting ready	<p>Introduce the Air Quality Campaign to your students</p> <p>Learn about Air Pollution - you are welcome to use our TY Air Quality module and our Air Pollution factsheets.</p>	Before the measurement period.
	<p>Pick locations for the NO₂ tubes - you are welcome to use our mapping lesson plan AQC2_Mapping resource as a guide.</p>	
	<p>Install the NO₂ tubes following the protocol instructions (instructions will be sent in October)</p>	October 15 th
Collecting supporting data	<p>Use our educational materials to gather supporting information – AQC3_Clouds, TY Weather module, conduct a traffic count – AQC4_Traffic_Count and examine your local topography in relation to air pollution with guidance from AQC5_Topography</p>	<u>Week of October 15th to week of November 12th</u>
Receive your NO ₂ results	<p>Analyse your NO₂ data and add your own interpretation</p> <p>Participating schools' data is shared by EEU/GLOBE with the teachers.</p>	Mid December
Findings	<p>Share your findings and solutions with the GLOBE Team, EEU.</p>	End December
Conclusion	<p>Reflect on what has been learned and how it can be used for positive change.</p>	

As part of this Air Quality Campaign, we invite you to use our associated class activities and lesson plans to guide you through the campaign, or, of course, you can use your own lesson plans and resources as you see fit.

GLOBE Air Quality Campaign Resources

Resource Type	File Name	Purpose	Curriculum link	Learning Outcome
Module	TY Module on Air Quality	Introduce the topic of air quality	TY group. JC Science, JC/LC Geography	Build knowledge and awareness around air quality
Lesson plan – design your Air Quality campaign study	AQC2_Mapping	Create a map of your local school and surroundings to guide NO ₂ tube placement for AQ campaign	JC Science (scientific process), JC/LC Geography (map creation, weather)	Develop: research skills, improve map work skills, observational methods, identifying prevailing winds and understand the practical scientific process
Lesson plan Cloud and weather observations	AQC3_Cloud and TY Module on Weather	Gather cloud and weather information to support AQ campaign	JC Geography (weather) and Science (Earth)	Build knowledge base around what drives weather, how weather can impact air pollution and develop hands-on data recording skills
Lesson Plan Conduct traffic count survey	AQC4_Traffic Count	Gather data on traffic levels close to the school to support AQ campaign	JC Mathematics (graphs, statistics) Geography (Transport)	Develop hands-on data recording skills and data analysis skills.
Lesson Plan Examine your local terrain	AQC5_Topography	Examine the landscape features around school to support AQ campaign	JC Geography (landscape, map reading)	Develop map reading skills, identification of landforms (valley, hills) on maps. Build knowledge on the effect of landscape on air pollution.
Fact Sheet	Traffic-related Air Pollution	Raise Awareness	TY group. JC Science, JC/LC Geography	Increase knowledge base on basic facts on topic of traffic-related air pollution and air quality.
Fact Sheet	Air Pollution and weather			
Fact Sheet	Air Pollution Health and Environment			

