

## Partner:



# Nimbus Research Fellow Teams up with North Presentation Primary School to Develop Air Quality Monitors

## Background

North Presentation Primary School is located in the historic centre of Cork City, just beneath the Shandon Bells. Founded by the Presentation Order, the school has a long history of education on the north side of the city and welcomes students from over 40 different ethnic groups, equipping them with confidence and skills for the future.

## The Need

North Presentation Primary School reached out to MTU for assistance with air quality monitoring. Due to the Covid-19 pandemic, it became necessary for the school to regularly ventilate classrooms to comply with regulations. This posed an issue for the school as the weather began to get colder. Air quality monitors would enable the school to strategically assess when classrooms needed to be ventilated, rather than opening windows and letting cold air in unnecessarily. However, most air quality monitors on the market were costly and it was considered by a school's representative that using off the shelf technology wouldn't be conducive towards promoting STEM.

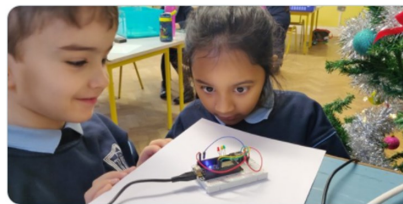
## The Solution

Juan Martinez, a research fellow from the Nimbus Research Centre at MTU, took on the project. For the retail price of one air quality monitor, Juan was able to build the school six. The monitor's development followed a modular approach with no protective enclosure, where cable connections could be seen, triggering curiosity amongst the children about the science behind the monitors. The devices worked on a simple traffic light system,

↳ Nimbus Research Centre Retweeted

North Pres Primary @NorthPresPrim · Dec 7, 2020

A big thank you to Juan from @NimbusCentre for making air and environmental monitors for our classrooms. @extendedcampus @PDSTPrimarySTEM @scienceirel



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providing data on the surrounding air quality and the presence of volatile organic compounds and relative CO2 levels. They were then further developed to give more detailed readings and included information such as temperature, barometric pressure, and humidity.

## Benefits of the Engagement

The engagement worked well on several levels. The school was able to comply with Covid regulations while keeping staff and students as comfortable as possible. It also promoted STEM subjects amongst the students in the school. The children were able to observe how the air quality monitors worked and understand the readings generated.

Juan hopes to further this project as schools return to classroom-based learning by developing the monitors to provide more graphical data in the readings. The development of the monitors means that students will gain a deeper understanding of the information produced.

Juan commented on the importance of the promotion of STEM amongst young

people "As a researcher, it is important to me to support where possible the promotion of STEM at early stages and I didn't hesitate to offer my help on this when asked. It was a pleasure to be part of this initiative. I had fun putting together the devices and felt really rewarded when I saw the faces of the children looking at the air quality monitors in action in some pictures."

**"North Pres was delighted to pair up with Juan and the Nimbus Centre to come up with solutions to Covid guidelines. The air quality monitors were a great help in this regard. Seeing monitors that were built locally by engineers using parts and pieces that are easily available will help kickstart an interest in STEM in the children and we hope to use these monitors after the pandemic for science experiments and demonstrations in the school. A big thank you to Juan, the Nimbus Centre, and MTU" -**

**Nickie Egan, Principal, North Pres Primary School**

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