Investigation into changes in the air quality throughout the school day

You can use our wide variety of atmospheric sensors to monitor how the air quality changes depending on different variables.

There are a huge number of possible applications and investigations, for example you may wish to place your sensors at the bus collection point and monitor how vehicle pollution varies at different times of day. Alternatively you could monitor the change in carbon dioxide levels in a classroom during the lesson and see if that affects students' productivity. Try to choose an area where there will be significant changes in the air quality throughout the day. The options are endless. Just be creative!

Equipment

(All the equipment and software you need can be obtained from www.sciencescope.uk)

Choose from the selection of sensors listed below (the more sensors you use the better quality result you will get):

- Carbon dioxide sensor
- Carbon monoxide sensor
- Nitric oxide sensor
- Nitrogen dioxide sensor
- Oxygen atmospheric sensor
- Sulphur dioxide sensor
- VOC sensor
- Anemometer
- Logbook ML or GLE Data Logger (the number needed will depend on the number of sensors used)
- Logbook Graphing Software

Sample experiment

The experiment below is an investigation into pollution level changes at the school bus collection point.

What you will investigate

You are going to investigate how the gas levels change at the front gate of your school over a 48 hour period during school term.

Equipment Needed

- Oxygen Atmospheric Sensor.
- Carbon Dioxide Sensor.
- Carbon Monoxide Sensor.
- Nitric Oxide Sensor.
- Logbook GLE Data Logger.
- Logbook Graphing Software.

Prediction

The Carbon Dioxide, Carbon Monoxide and Nitric Oxide levels in the air will increase around the school drop off and collection times.

Plan

1. Connect the four sensors to the Logbook GLE and place in position for monitoring.
2. Set the Data Logger to record and leave for 48 hours.
3. After the 48 hours has completed save the recording into the Data Logger.
4. Connect the Data Logger via USB to a computer with Logbook Graphing installed. Transfer the data onto Logbook Graphing from the Data Logger and view the results.
5. Evaluate the investigation and see if your prediction was correct.

Variations

You could take this investigation further by using an Anemometer to measure wind velocity. This could affect how quickly the gases are dispersed from the vicinity where they were produced.