

Extracted Data Sets: Explanatory notes and a worked example (Post 16 students)

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Explanatory notes

In this section you will find data sets, extracted from the Air Quality Archive (obtained 30-31 March 2020), for the 4 capital cities of the home nations (**Belfast, Cardiff, Edinburgh and London**), for the years **2010, 2012, 2014, 2016, and 2018**. The data (PM_{2.5/10}) from a clean air (countryside) site is also available. Only data on the main atmospheric pollutants have been extracted.

You will also find a data sheet for London (Marylebone Road) 2012 as a worked through example showing a few of the many possible ways of looking at the information. Others will exist in some sites but you will need to interrogate the Defra archive.

Worked example

From Marylebone Road, London for 2012 (London Olympics year).

The daily data (extracted 31 March 2020) for measurements of common pollutants is reproduced [here](#).

The Air Quality Datasheet shows some of the raw data.

After each column of numbers is a column with a letter code and the units of measurement. The V states the measurements have been verified, N = not verified, S = suspect data. The units are micrograms per cubic metre, $\mu\text{g m}^{-3}$.

Nitrogen (di)oxide columns. Two different nitrogen oxides are measured (NO and NO₂ and data recorded). A third column where all NO has been converted to NO₂ and added to original NO₂, is also present.

Carbon monoxide and sulfur dioxide data are given.

(PM₁₀ and PM_{2.5}). For the particulate of both sizes, the total concentrations of each are present (taken hourly and averaged over the day). Within the PM data columns for each size, more detail is given as the particulates are divided up into those that are volatile and those that are not. For most projects the total PM data is all that is likely to be required.

Each major pollutant is then reproduced on successive sheets. On each sheet an average per month was calculated so that subsequent rough plots were generated. 'Rough', because the axes were not titled, no units were given (apart from in legend) and an inaccurate graph title used.

The type of plot you might want to use is up to you. On the particulates PM_{2.5} sheet the daily average hourly data for the year (days numbered rather than dates given) was plotted as was the monthly average.