

Data Journey: Exploring the Graph

I'm a
Scientist
**Decipher my
data!**

Introduction

The **Data** page shows the electricity consumption data for your school going back up to 3 years. This is an extremely rich data set that can reveal lots about your school and can provide great fun for your students to investigate.

This Data Journey is designed to help you, the teacher, familiarise yourself with the data before going wild with your learners.

The steps outlined below should show you the main elements and features.



The Journey

1. Go to the **Data** page. By default the graph will display *Electricity Consumption – Day profile Grouped by Day of week* for the *Last Month*. The **Chart Title** describes the graph based on the options you choose. The *options* are selected on the right.
2. The **y axis** is Average Electricity Used measured in kilowatt hours (kWh). It automatically displays a range between the highest and lowest figures for your school or the average, whichever is larger. Change *Compare To:* to *No Comparison* and click **Draw**. If your school is below average you will have seen the axis change. If you are above average it won't have changed. Now change *Time Period* to something new and click **Draw** (you always need to click draw to show your new options). You should see no change.
3. The **Group By** option changes the data series to display either individual days, the average for a week or month, or the average for a particular day (Monday, Tuesday, Wednesday etc.) for the **Time Period** selected. The **Group By:** *Day of Week* option is very useful for spotting regular patterns. You can change it to *Day*, *Week* or *Month*. Change **Group By:** to *Day*. Click **Draw**. Now you should see some unexpected peaks and troughs.
4. Move your cursor over one of the highest peaks. You'll see a **data label** appear. This tells you the *date* and *time* along with the *kWh hours* consumed in that 30 minute period. If you select a recent date from 2014 you'll also notice a *Cloud: %* and symbol. This is the amount of cloud cover in Bristol at that point in time. This is of particular importance if you have solar pv panels providing electricity for your school. The weather station providing the cloud cover is based at the Create Centre on Spike Island near Ashton Gate. The exact cloud cover at your school may differ but on average it should work out.
5. Sometimes you might want to focus on a particular time period. Change **Time period** to *Custom* and choose an appropriate *Start and End Date* – perhaps a single week. This allows you to examine your consumption in detail. To highlight a particular day, click on the coloured square in the legend. A thin line will appear next to the data series.

6. There are 3 options for the **x-axis**. Select **Time Period: 2011/12** and **X-Axis: 12 Months** (& click **Draw**). The x-axis now lists the months and you'll see all the available data for the years specified.
7. There are two chart types available. Change **Chart Type** to **Bar. Draw**. Note how the y-axis hasn't changed. The graph displays average amount (kWh) of electricity consumed per 30 minutes, and not the total for the day.
8. The **Compare To:** option allows you to compare to *Average Schools* (across participating schools in Bristol) and against different *Time Periods*. Change **Compare To: 2013/14. Draw**. Now you can see average consumption by month across 2011 – 2014.
9. Once you have found your ideal graph you can use the **Save Graph To Lab Logs** button to save a copy of the graph in your **Media Library**. You can find it when you **Write A Lablog** and click on **Add Media**.

Now you know all the features of the graphs try a few Data Journeys to get your learners discovering how graphs and data can tell stories about their school.