Activity description

Students use weather data to consider which month would be the best to hold an outdoor gig.

The activity gives students practice in using either a calculator or a spreadsheet to calculate mean and range values.

Suitability and Time

Level 1 (Foundation)
1–2 hours (possibly longer if students also draw charts and graphs)

Resources and Equipment

Student sheets
Optional: slideshow, spreadsheet
Calculators or computers

Key mathematical language

Sum, average, mean, median, range, maximum, minimum

Notes on the activity

There are two versions of this activity, and two different student sheets.

Outdoor Gig A for use with calculators

The student information sheet gives total monthly sunshine data in England and Wales for 2001–2010 and shows how to calculate the mean for July. Version A of the slideshow includes the same data and calculation. You could ask students to check that they can calculate this themselves before they go on to find the mean for May, June and August.

The slideshow and student sheets then show how to find the range for July, and again students can check that they can find this themselves before they go on to calculate the range for May, June and August.

The mean and range values are given in a table for discussion before students go on to the more open-ended part of the activity in which they find and compare results for other months and other weather data.

You will need to provide students with the data you want them to use for this part of the activity.

The accompanying spreadsheet includes temperature, sunshine and rainfall data for England and Wales (EW), Scotland (S) and Northern Ireland (NI) for each month in the period 1960–2010. You may wish to reduce the amount of data or allocate different datasets to different students.

The 'Outdoor Gig spreadsheet for teachers' gives the results for periods of 10, 20 and 50 years.

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Outdoor Gig B for use with a spreadsheet

This version is for use with the accompanying 'Outdoor Gig data for students'. The spreadsheet includes temperature, sunshine and rainfall data for England and Wales (EW), Scotland (S) and Northern Ireland (NI) for each month in the period 1960–2010. You may wish to reduce the amount of data or allocate different datasets to different students.

The student information sheet gives total monthly sunshine data for England and Wales from 2001–2010, and the spreadsheet formulae for calculating the mean and range.

The slideshow includes the same information and can be used to introduce the activity. You could also use the EWSun worksheet in the spreadsheet to demonstrate how to find the mean and range for the period 2001–2010. It is suggested that you ask students to check that they can also use a spreadsheet to find these, then go on to find the mean and range for May, June and August.

The slideshow (and student sheets) includes a table with the results for these months. You could use this for class discussion before students go on to the more open-ended part of the activity in which they find and compare results for other months and other weather data.

The 'answers for teachers' gives the results for periods of 10, 20 and 50 years.

During the activity

Individual students or pairs of students could be allocated different sets of data to investigate, and the results pooled for final discussion.

Points for discussion

Discuss questions such as:

- Why has the mean been used rather than the median or mode?
- Which matters most – rain, warmth, sunshine?
- Would the results give more reliable answers if you used data from a longer period?
- Would you need to take climate change into account if you used data going back 50 years?
- Can you predict next year's weather reliably from previous data?

Further points for discussion are given in the 'At the end of the activity' section in the slideshow and student sheets.

Extensions

Students could include charts and graphs in their reports.
You may wish to limit the data to 2001–2010 for some students, whilst more able students could use the data for 20 or all 50 years.

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