



### Activity description

Students investigate relationships between anthropometric variables and write a report on their findings.

This may include the use of scatter diagrams, lines of best fit, regression lines, and correlation coefficients.

### Suitability and Time

L3 (Advanced); 2–4 hours

### Resources and equipment

Student sheet, Excel spreadsheet, computers, calculators

### Key mathematical language

scatter diagram, line of best fit, regression line, correlation coefficient

### Notes on the activity

The spreadsheet contains anthropometric data from a sample of nearly 4000 children and young adults with ages ranging from 2 years to 20 years.

One worksheet gives the original mixed data whilst others give the data for males only, females only, and all children sorted by age and stature.

There is an Introduction worksheet to introduce the activity, and a Reflection worksheet to use at the end of the session.

The data can be used to introduce and practise techniques involving correlation and regression, or as the basis for an assignment on these topics. The large quantity of data means that students can be given different datasets if you wish.

The children on each worksheet of the data set are numbered so that different samples can be easily identified.

### During the activity

Students could work individually or in pairs or small groups.

### Points for discussion

Depending on how much help you wish to give students, you could discuss which variables are most likely to be strongly correlated, and methods to investigate whether this is true.

### Extensions

Students could read and comment on the reports written by other students.

#### Acknowledgement

The original data were collected in the USA in 1977 for a study by the Consumer Product Safety Commission (CPSC).

The full dataset is available from a website set up by the CPSC and the Information Technology Laboratory (ITL) at the National Institute of Standards and Technology (NIST) <http://math.nist.gov/~SRessler/anthrokids/>