



**“Climate is what we expect, weather is what we get.”**

*Level:* Key stage 4 (NC 8-10+) and Key stage 5.

*Assumed knowledge:* Basic use of Excel

*Objectives:*

- Evaluate the use of a computer to speed up a manual process.
- Become efficient with the use of Excel functions, RAND, IF, and AVERAGE
- Practise displaying results using Excel
- Compare experimental and theoretical results (probability)
- Consider relative usefulness of data.

In this activity, students use ideas about probability to consider the difference between theoretical and experimental results.

The activity is in two parts. You may wish to stop at the end of the first part, or continue to include the use of an Excel spreadsheet.

**Part 1:** Pupils throw a die; each throw represents the weather for one day. After 100 throws, they calculate the average (mean) weather (i.e. the climate) over that time.

**Part 2:** Pupils use the random number function in an Excel spreadsheet to model the throwing of a dice 100 times, and repeat this several times. They examine a graph which shows how the mean value approaches the expected value over time.

A set of specimen data is provided as a spreadsheets. You could delete the data from this to help pupils who have difficulty in setting up equations.

dice\_sample\_data.xls



**climateprediction.net**