

Activity sheet 3: Throwing two dice

Framing your hypothesis for throwing one die was straightforward. Now try using two dice. How many times would you expect a total score of, say, 6 in 100 throws?

- 1 Use a new worksheet on your spreadsheet.
- 2 Use columns A and B for 'die 1' and 'die 2' respectively. Use column C for 'total score'.
- 3 Simulate the throwing of both dice 100 times, using the RANDBETWEEN function, and calculate the total score for each trial.
- 4 Use the <F9> key to recalculate over and over again.
- 5 Elsewhere in the spreadsheet, calculate the number of times each total score occurs by using the COUNTIF function. See note below.
- 6 Construct a chart to display the results and update them constantly.

Was the hypothesis for a total score of 6 correct?

What does the chart tell you?

Do certain scores occur more often than others?

How much variation is there?

What are the extreme values?

What does the model tell you? What doesn't it tell you?

How could the model be improved?

- 7 Extend the model so that there are more trials.

Does the model 'improve' as trials are increased?

Is there less variation and/or fewer extreme values?

Which total score comes up more than others?

Can you explain why this is so?

Note: The average score for each die is 3.5.

Note: You could do this by entering each COUNTIF formula separately. Alternatively, use absolute cell referencing and copy the formula.