

Random Number Generation

When you are starting to do an experiment, you may want to **randomize** participants, sentences, test items, and so on. This means that you do not select them deliberately but that you use some sort of way of selection that involves chance. You can use your computer to help you generate random numbers that you will apply to your participants, your sentences, your test items, or whatever you need.

Generating Random Numbers in Excel

First, when you open Microsoft Excel, you will see the formula bar below the tool bar. This is the place where you type in formulas, and follows the character “fx.” Figure 1 shows Excel 2013, but previous versions of Excel work exactly the same way. To create random numbers between 1 and 100, simply type the following syntax into the formula bar, exactly as shown:

```
=RANDBETWEEN(1,100)
```

After you type this, press the ENTER button. The RANDBETWEEN command shown here will generate random numbers between 1 and 100. Of course, if you want random numbers between, say, 1 and 10 you just alter the syntax in the command. At first, only one number in the top cell will appear, but just use the handle to pull the random numbers down as many rows and over as many cells as are necessary. You can also click directly on the “fx” and start typing RANDBETWEEN. This will call this function up and you will not have to type

the name into the formula bar, but just enter your values.

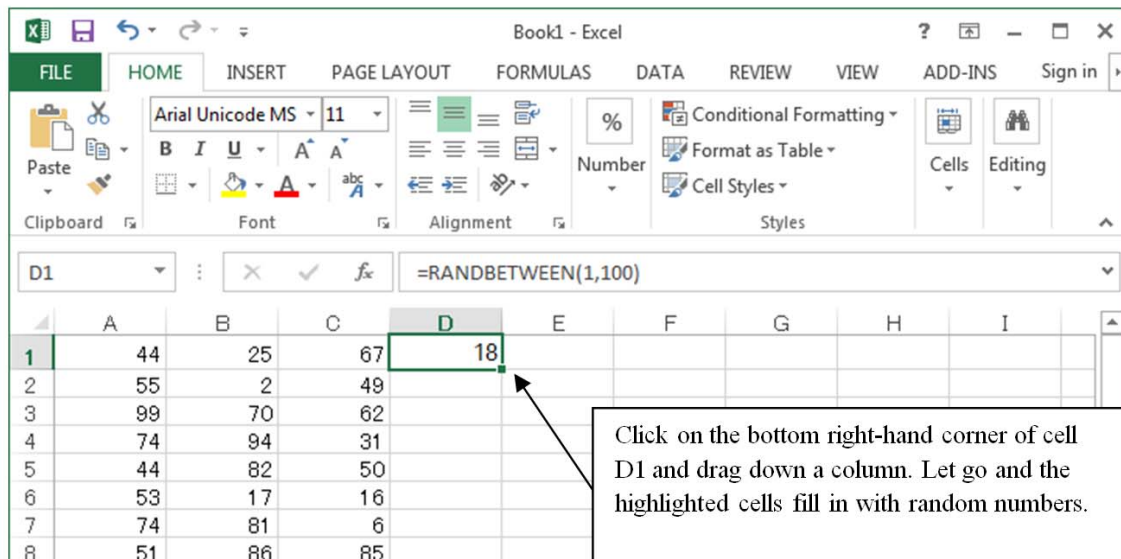


Figure 1 Generating random numbers in Excel.

If you are using an older version of Excel, you will need to make sure the Analysis ToolPak has been installed. Do this by pulling down the TOOLS menu. If you see DATA ANALYSIS on the list, the ToolPak is installed. If it is not, find ADD-INS (still in the TOOLS menu) and click on it. A box will open; click on ANALYSIS TOOLPAK and then OK. It is not necessary to actually open the Data Analysis box. You will then be able to use the RANDBETWEEN function as explained above.

Random Number Generation in R

Random number generation may be useful when conducting experiments. When you are starting to do an experiment, you may want to randomize participants, sentences, test items, etc. You can generate random numbers in R by simply typing `.Random.seed` in the R console:

`.Random.seed`

```
[1]          403          352   647596969   505200444   240961364  -405956513
[7]  1383978883  -757042607 -1537940647  1335279341 -1415915721  -553350035
[13]  1206833492  1544732470    61259225 -1901511605  1941367673   144512002
[19]  -133901986   704475269  1373605742   946416810 -1594397076  1611783465
[25]  2099204935  1399887620   387066228  1563494368  1212353276  1355307236
[31]  1928977319   598844249  1762831767  1393242963  1627814881  -706537856
```

Random single integers can be drawn from this distribution by simply going across the row: 4, 0, 3, 3, 5, 2, etc. Random numbers between 0 and 99 can be drawn by going across the row in pairs: 40, 33, 52, 64, etc.