

Creating Beach Profiles in Excel 2016

Save a copy of the **Beach Profile Spreadsheet** (find it at the web address in the header – go to the Geography section) and use this to work through the instructions.

Enter the data you have for angles and distances. It's easiest to start from the shoreline and work up the beach for this.

You should end up with something like the spreadsheet on the right. Just ignore any blank rows underneath – they're there in case you have a really wide beach.

Use this version if you laid your measuring tape along the beach

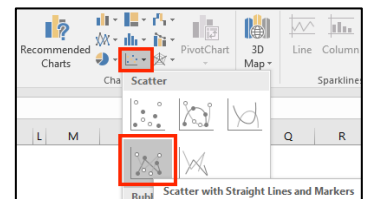
| Point | Angle | Dist along beach | Distance from shore | Actual Vertical Change |
|---------|-------|------------------|---------------------|------------------------|
| 1 (Sea) | 0 | 0 | 0 | 0 |
| 2 | 15 | 4.1 | 3.96 | 1.06 |
| 3 | -4 | 4.5 | 8.45 | 0.75 |
| 4 | 15 | 4.7 | 12.99 | 1.96 |
| 5 | 1 | 7.9 | 20.89 | 2.10 |
| 6 | 5 | 8.1 | 28.96 | 2.81 |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |

STOP! Don't press delete on these cells. They contain formulae in the background that you don't want to delete.

Now, draw the beach profile:

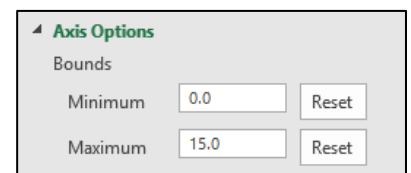
1. **Highlight** the cells in columns J and K with numbers in. Don't forget the zeros in row 6. In the screenshot I highlighted from J6 to K11.

2. Click **Insert** on the ribbon > and choose a chart at the top – you want to choose a **Scatter with Straight Lines and Markers**. This will draw a basic profile, but it looks a bit odd



3. **Right click** on one of the vertical (up/down) axis numbers > choose **Format Axis**. A sidebar pops up on the right

4. In the **Bounds** section, set the **Maximum** value to something like 15. Make sure the **Minimum** value is set to 0.



You might want to set the horizontal axis maximum value to a little less than it is automatically if you think the axis carries on for too far on the right.

5. **Move** the chart to a new sheet. **Unlock** the sheet first (**Review** tab on the ribbon and press the locked **Sheet** button) then click the **Design** tab > choose **Move Chart** on the right and select a **New Sheet** > **OK**

6. Add **axis titles** – click **Design** > **Add Chart Element** (on the left) > **Axis Titles**:

- Vertical axis: Height of beach (metres)
- Horizontal axis: Distance from shoreline (metres)
- Don't forget to change the chart title as well.

You can now add labels (using text boxes) or photos to the chart. You may want to adjust gridlines (**Design** > **Add Chart Element** again) – try adding minor gridlines to the vertical axis.