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| **Choosing the right graph in Excel** | | | | | | |
| **Guide?** | **Presentation Level?** | **Graph type** | **Example** | **Application** | **Variants** | **Notes** |
| (Y) |  | Column | Column chart | * Shows data *change over time* * Illustrates *comparisons* | * **Clustered** Compares values across categories * **Stacked** Shows relationship of individual items to the whole across categories * **100% stacked** Compares percentage a data contributes to a total across categories * **3D** Compares data along two-axes | * Good for showing discharge, hydraulic radius – any set of values that change downstream |
| (Y) |  | Bar | Bar chart | * Illustrates *comparisons* between individual items | * **Clustered** Compares values across categories. Categories are organised vertically, value horizontally - this places focus on comparing values. * **Stacked** Shows relationship of individual items to the whole across categories * **100% stacked** Compares percentage a data contributes to a total across categories | * Good for showing how values change if *comparison* is the focus. |
| (Y) |  | Line | Line chart | * Shows trends in data *at equal intervals*. | * **Stacked** Shows relationship of individual items to the whole across categories * **100% stacked** Compares percentage a data contributes to a total across categories * **3D** 3D effect! | * If sample sites are equally spaced, could be used to show how variables change between sites. |
| (Y) |  | Pie | Pie chart | * Shows the size of items that make up a data series * Only shows *one* data series * Can be 2D or 3D | * **Exploded Pie** Emphasises individual values by separating sections of the chart (2D or 3D). | * Useful for emphasising something significant * Use a doughnut chart if you have multiple-series of data to graph |
| (Y) |  | Pie of pie & Bar of pie | Pie chart containing smaller pie chart | * Useful for showing sub-sets of data or values too small to be clear on a pie chart | * **Pie of pie** Specific values are extracted and shown in a second pie chart. Makes small slices of the main pie chart easier to see or shows subset of data * **Bar of Pie** As above by extracted data is used to draw a bar graph | * Chose to illustrate a specific point using a subset of data OR if values are too small to be clear on a normal pie chart |
| (Y) |  | Area | Area chart | * Emphasises magnitude of change over time * Shows relationship of parts to whole | * **Stacked** Shows relationship of individual items to the whole across categories * **100% stacked** Compares percentage a data contributes to a total across categories | * Use to show how the value of a variable changes downstream. |
|  |  | Cylinder / cone / pyramid | 3-D column chart with pyramid data markers | * A variation of a column or bar chart | * **Cylinder** Uses cylinders * **Cone** Uses cones * **Pyramid** Uses pyramids | * May be appropriate to reflect value being graphed, e.g. sharp things 🡪 pyramids * Probably unnecessary as doesn’t add anything beyond normal variant. |
| (Y) |  | Histogram | The Histogram tool can automatically create a column chart like this one. | * Plots data within specific intervals as a bar graph |  | * May be useful to illustrate bedload size/shape/angularity * Sorts data into bins * May look like a bar chart but isn’t! * A little complicated to set up, then easy to use. |
|  |  | Gantt | Example of a Gantt chart in Excel | * Illustrates a planning timeline |  | * Shows timeline of project * Useful to illustrate structure of work in detail |
|  |  | Surface | Picture of a formatted surface chart | * Creates topographic map using colour to show similar values. | * **3D Surface** Shows data across two dimensions in a continuous curve. * **Contour** A surface chart viewed from above. Colours represent specific ranges of values. |  |
| (Y) |  | Stock | Volume-High-Low_Close Stock chart | * Plots average and range as bars from a point. | * **High-Low-Close (HLC)** Needs three series of data, e.g. average/max./min., and will plot these as a point with a bar up to the max. and down to the min.. * **Open-High-Low-Close** N/A * **Volume-High-Low-Close (VHLC)** Needs four series of data, e.g. discharge/average/min./max. bedload size. Will plot discharge as a bar graph in addition to HLC point and bars. * **Volume-Open-High-Low-Close** N/A | * Useful to show variation in data at a specific site (VLC) * Can show two variables, including variation of one |
| (Y) |  | Bubble | Picture of a Bubble chart | * A variation of a scatter chart * Use if you have three data series all containing values (no gaps) * Plots data against two axes and by varying size of bubble. |  | * Can do multiple series. * Can show proportionally-sized pies & error bars. |
| (Y) |  | Scatter | Picture of a scatter chart | * Similarities between sets of paired or grouped data | * **Scatter with data points connected by lines** Smoothed or straight lines connect data points | * Don’t confuse with a line chart in which the data are evenly spaced. * Can be used to show relationships/pattern/trends |
|  |  | Radar | Radar chart | * Compares aggregate values from several series of data * Plots data relative to centre point | * **Filled Radar** The area covered by a data series is filed with colour (may make illustration easier or differences more apparent). | * Discursive tool * Data must already be processed. |
|  |  | Doughnut | Doughnut chart | * Shows the relationship for parts of whole by displaying data in rings. * Able to show multiple data series on one graph | * **Exploded doughnut** Like an exploded pie chart, can draw attention to size of each variable but can show more than one data series | * A doughnut chart shows several series a data; a pie-chart shows ONE series of data |