Key Principles of Data Visualizations

1. Strive for clarity and simplicity - If it doesn't add value, leave it out
2. Focus on creating a narrative – tell a clear story
3. Strike a balance between design & function – select the right type of chart

Tip: 10 Second Rule

- If a viewer cannot understand your story within 10 seconds, you need to revisit your chart

Key Questions

1. What type of data are you working with?
2. What are you trying to communicate?
3. Who is the end user consuming this information?

Chart Types

Bar & Column Charts

- Used for comparing things between different groups
- Tip: Use stacked or cluttered bar/columns to group by subcategory or compare multiple metrics

Histograms & Pareto Charts

- Used for showing the distribution of a continuous data set
- Tip: Adjust the bin size to customize the grouping of values

Line Charts

- Great for tracking changes over short and long periods of time
- Tip: Use linear or polynomial trendlines to visualize patterns or forecast future periods

Area Charts

- Used for tracking changes over time for one or more groups
- Tip: Keep the number of unique categories relatively low (<6) to maintain clarity

Pies & Donuts

- Used for comparing parts of a whole. They do not show changes over time
- Tip: Keep the number of slices small (<6) to maximize readability

Scatter Plots

- Used for exploring correlations or relationships between two sets of values
- Tip: Add a trendline or line of best fit to show the correlation between variables

Bubble Charts

- Used for adding a third dimension (size) to a scatter plot format
- Tip: Use colour as a fourth dimension to differentiate between categories

Box & Whisker Charts

- Used for showing the spread and centres of a data set
- Tip: By default, quartiles are calculated by **excluding the median**; this calculation can be adjusted to **include** the median, but may significantly change the result (particularly for smaller data samples)

Tree Maps & Sunburst Charts

- Visualizing hierarchical data with natural groups/sub-groups
- Tip: Make sure your raw source data is **grouped** and **sorted** before creating hierarchical charts

Waterfall Charts

- Showing the net value after a series of positive and negative contributions
- Tip: Use **sub-totals** to create "checkpoints" and split up certain types of gains/losses (i.e. **Gross Revenue** – Cost of Goods Sold = Gross Profit, Gross Profit – Operating Expenses = **Operating Income**, etc.)

Funnel Charts

- Showing progress through the stages of a funnel
- Tip: **Customize colours** to emphasize progression towards an end goal

Radar Charts

- Plotting three or more quantitative variables on a two-dimensional chart, relative to a central point
- Tip: **Limit the number of categories** or data series to minimize noise and maximize impact

Stock Charts

- Visualizing stock market data, including volume, high, low, open, and closing prices
- Tip: Manually set **axis minimum/maximum values** to enhance readability

Heat Maps

- Visualizing trends or relationships using colour scales
- Tip: Use intuitive colour scales (i.e. **red** to **green**) and apply custom formatting to hide cell values (;;;)

Surface & Contour Charts

- Plotting data in three dimensions to find optimum combinations of values
- Tip: Don't use surface charts if a simple heat map will tell the same story

Geospatial Maps (Power Map)

- Visualizing location-based data
- Tip: Utilize attributes like **colour** and **size** to visualize multiple attributes at once

Catch the Replay [link needed] or browse our free resources. Ready for the next step? Register for Excel Level 2 (Intermediate) and Mastering Charts & Graphs in Excel today!