Designing & Using Charts & Graphs

Overview
After this presentation, you should better understand:
- Using the right chart or graph to present your information
- Design principles for charts and graphs
- How to lie and cheat with graphs, numbers and statistics

Use the right tool

<table>
<thead>
<tr>
<th>Percentage and Proportion</th>
<th>Pie, divided bar chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rankings</td>
<td>Visual table, bar or line graph</td>
</tr>
<tr>
<td>Cumulative totals</td>
<td>Layer or stacked graph</td>
</tr>
<tr>
<td>Value, time, space relationships</td>
<td>Diagram, chart, or map</td>
</tr>
</tbody>
</table>

Pie charts
- Pie is based on ________________
- Slice represents relative amount of a ________________
- Slices should be percentages—not absolute values
- Good design:
  - Easily distinguished pie slices
  - ________________ slice starts at 12 o’clock and continues clockwise
  - Slice size decreases clockwise around pie
  - Label the pie ________________

Things to avoid on a pie
- Exploding all the slices
- Inconsistent labeling
- Legends
- No labeling

Proportional bar chart
- Used to show proportional amounts as a pie chart
- Use side scale for more ________________ measures
- Make it wide enough to read
- If you have multiple bars, put the least varying factors first

Bar charts
- Use to show change in ________________ (ordered sequence, e.g., 1st, 2nd, 3rd) or ________________ (name or form, e.g., Yahoo, Google, Ask.com) data
• Usually vertical, but use horizontal if it makes sense
• Color code consistently
• Avoid ________________ emphasizing one line
• If you use a legend, have it follow the ________________ of your bars

Line graphs
• Used to show change in ________________ and ________________ data
• Vary color or line weight to call attention to specific points
• Points on the line are important for precise values
• Be consistent with ________________
• Put warm, bright colored lines on top
• Use a scale that accurately reflects the change in information

Picture chart or graph
• You can use pictures in the place of a bar chart or graph
• Follow color and ________________ conventions
• Have the pictures align in the same direction
• Vary size not color or shading

Tips for diagrams and maps
• Follow the culture of the information
• Identify relationships on a chart
• Use color, line weight, shading to organize information
• Show only ________________ information
• Avoid gridlines unless needed

Organizational charts
• Squares or rectangles to indicate divisions
• ________________ down structure
• Solid lines - direct relationships
• Dashed line - indirect relationships

Figure and Table Labels
• Very important
• Number each figure sequentially
• Place label under chart in same location (repetition)
• Provide a title
• Provide an informative caption to identify the purpose or meaning
• All figures ________________ referenced in the narrative
• Figure placed as close as possible immediately ________________ the narrative reference

Lying with graphs
• Altering the y-axis
• Distorted shapes
• ________________ start point
• Using color, lines or other technique to distort differences
• Using 3-D effects or distortions

Lying charts and statistics
• Percentages and absolute values
• Numbers are relative
• Squishy numbers and figures
• Value labels
• _______________